MITSUBISHI ELECTRIC

SPLIT-TYPE AIR CONDITIONERS

Revision D:
- MSZ-FH25VE2-[E1], [ER1], MSZ-FH35VE2-[E1], [ER1] and MSZ-FH50VE2-[E1], [ER1] have been added.

Please void OBH623 REVISED EDITION-C.

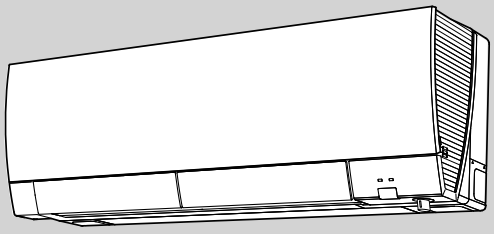
INDOOR UNIT
SERVICE MANUAL

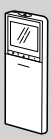
No. OBH623
REVISED EDITION-D

Models

MSZ-FH25VE - [E1], [ER1]
MSZ-FH35VE - [E1], [ER1]
MSZ-FH50VE - [E1], [ER1]
MSZ-FH25VE2 - [E1], [ER1]
MSZ-FH35VE2 - [E1], [ER1]
MSZ-FH50VE2 - [E1], [ER1]

Outdoor unit service manual
MUZ-FH·VE Series (OBH624)
MUZ-FH·VEHZ Series (OBH625)
MXZ-D·VA Series (OBH626)





CONTENTS

1. TECHNICAL CHANGES ····· 3
2. PART NAMES AND FUNCTIONS ····· 4
3. SPECIFICATION ····· 5
4. NOISE CRITERIA CURVE ····· 6
5. OUTLINES AND DIMENSIONS ····· 7
6. WIRING DIAGRAM ····· 8
7. REFRIGERANT SYSTEM DIAGRAM ····· 10
8. SERVICE FUNCTIONS ····· 11
9. MICROPROCESSOR CONTROL ····· 13
10. TROUBLESHOOTING ····· 21
11. DISASSEMBLY INSTRUCTIONS ····· 38

PARTS CATALOG (OBB623)

NOTE:
RoHS compliant products have <G> mark on the spec name plate.

Use the specified refrigerant only

Never use any refrigerant other than that specified.

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.
Correct refrigerant is specified in the manuals and on the spec labels provided with our products.
We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

<Preparation before the repair service>

- Prepare the proper tools.
- Prepare the proper protectors.
- Provide adequate ventilation.
- After stopping the operation of the air conditioner, turn off the power-supply breaker and remove the power plug.
- Discharge the capacitor before the work involving the electric parts.

<Precautions during the repair service>

- Do not perform the work involving the electric parts with wet hands.
- Do not pour water into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold areas in the refrigeration cycle.
- When the repair or the inspection of the circuit needs to be done without turning off the power, exercise great caution not to touch the live parts.

Revision A:

• MSZ-FH50VE- E1 has been added.

Revision B:

• MSZ-FH25VE-ER1, MSZ-FH35VE-ER1 and MSZ-FH50VE-ER1 have been added.

Revision C:

• 5. OUTLINES AND DIMENSIONS has been modified.
(The length of the connect pipes has been modified.)
• "How to check miswiring and serial signal error" has been modified.
• Some descriptions have been modified.

Revision D:

• MSZ-FH25VE2-E1, ER1, MSZ-FH35VE2-E1, ER1 and MSZ-FH50VE2-E1, ER1 have been added.

1 TECHNICAL CHANGES

These models are compatible with the outdoor units with low standby power control.
Connecting these models to the MUZ-FH·VE(HZ)-series outdoor units enables the low standby power control. Refer to the technical guide (OBT17) about the low standby power control.

These models may be connected to the MUZ-FH·VE(HZ) series after once connected to the MXZ series and operated, for example because of relocation. In that case, the MUZ-FH·VE(HZ) series outdoor units will not operate without taking a step. Follow the procedure "Deleting the memorized abnormal condition" described in 10-2.1.

MSZ-FH25VE -E1
MSZ-FH35VE -E1
MSZ-FH50VE -E1
1. New model

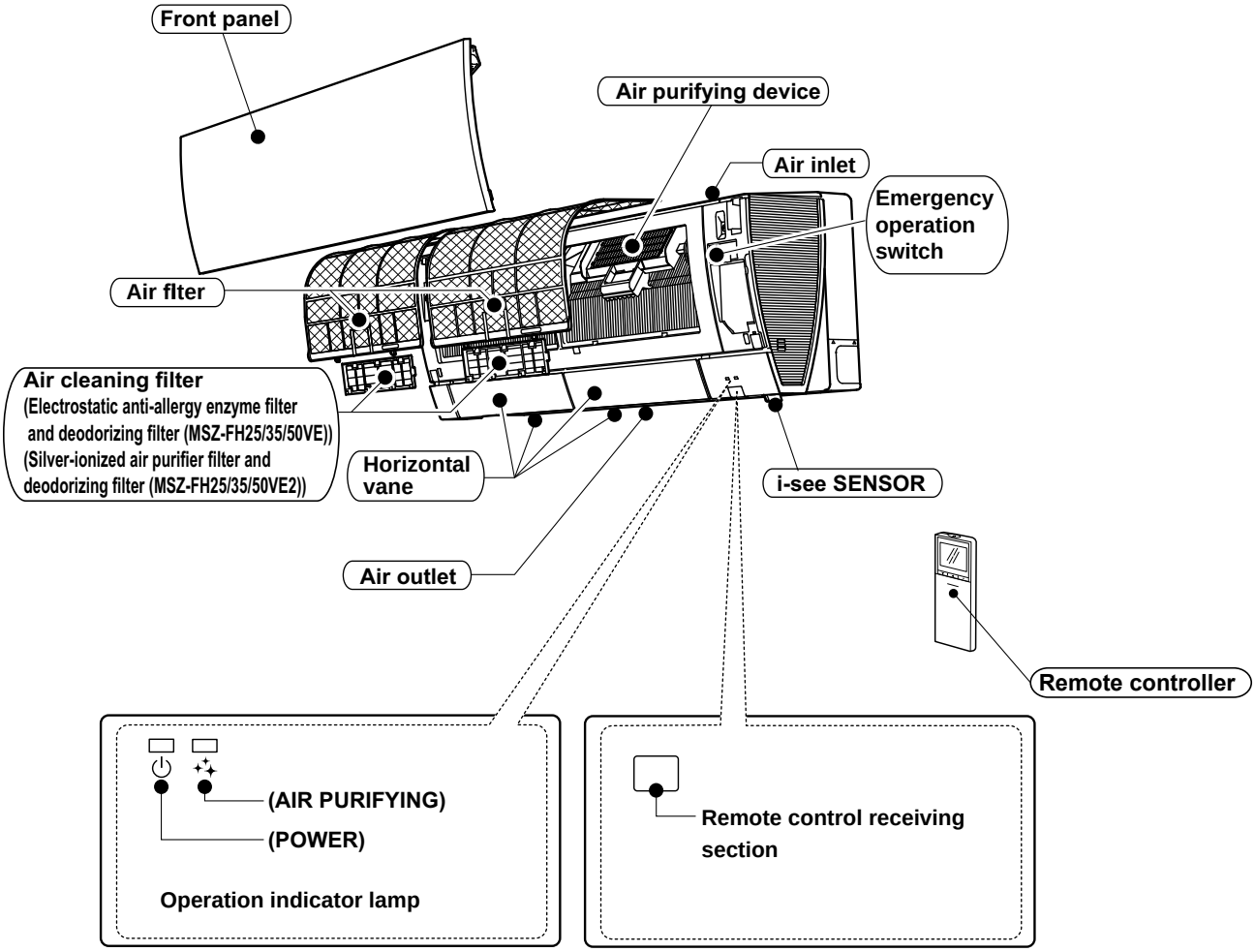
MSZ-FH25VE -ER1
MSZ-FH35VE -ER1
MSZ-FH50VE -ER1
1. New model

MSZ-FH25VE -E1 → MSZ-FH25VE2 -E1
MSZ-FH35VE -E1 → MSZ-FH35VE2 -E1
MSZ-FH50VE -E1 → MSZ-FH50VE2 -E1
1. Air cleaning filter has been changed.

MSZ-FH25VE -ER1 → MSZ-FH25VE2 -ER1
MSZ-FH35VE -ER1 → MSZ-FH35VE2 -ER1
MSZ-FH50VE -ER1 → MSZ-FH50VE2 -ER1
1. Air cleaning filter has been changed.

2 PART NAMES AND FUNCTIONS

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2



ACCESSORIES

	Model	MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller holder	1
④	Fixing screw for ③ 3.5 × 16 mm (Black)	2
⑤	Battery (AAA) for remote controller	2
⑥	Wireless remote controller	1
⑦	Felt tape (For left or left-rear piping)	1
⑧	Air cleaning filter (Electrostatic anti-allergy enzyme filter)	1
	Air cleaning filter (Deodorizing filter)	1
⑨	Air purifying device	1

	Model	MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2
①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller holder	1
④	Fixing screw for ③ 3.5 × 16 mm (Black)	2
⑤	Battery (AAA) for remote controller	2
⑥	Wireless remote controller	1
⑦	Felt tape (For left or left-rear piping)	1
⑧	Air cleaning filter (Silver-ionized air purifier filter)	1
	Air cleaning filter (Deodorizing filter)	1
⑨	Air purifying device	1

3 SPECIFICATION

Indoor model					MSZ-FH25VE	MSZ-FH25VE2	MSZ-FH35VE	MSZ-FH35VE2	MSZ-FH50VE	MSZ-FH50VE2
Power supply					Single phase 230 V, 50 Hz					
Electrical data	Power input ✻1		Cooling	W	29				31	
			Heating		29				31	
	Running current ✻1		Cooling	A	0.28				0.29	
			Heating		0.28				0.29	
Fan motor	Model				RC0J30-MD					
	Current ✻1		Cooling	A	0.28				0.29	
			Heating		0.28				0.29	
Dimensions W × H × D				mm	925 × 305(+17) × 234					
Weight				kg	13.5					
Special remarks	Air direction				5					
	Airflow	Cooling	Super High	m^3/h	696				744	
			High		516				606	
			Med.		378				516	
			Low		282				444	
			Silent		234				384	
		Heating	Super High	m^3/h	792				876	
			High		552				672	
			Med.		384				540	
			Low		282				432	
			Silent		240				342	
	Sound level	Cooling	Super High	dB(A)	42				44	
			High		36				39	
			Med.		29				35	
			Low		23		24		31	
			Silent		20		21		27	
		Heating	Super High	dB(A)	44				46	
			High		36				39	
			Med.		29				34	
			Low		24				29	
			Silent		20		21		25	
	Fan speed	Cooling	Super High	rpm	1,220				1,280	
			High		970				1,090	
			Med.		770				970	
			Low		630				870	
			Silent		550				780	
		Heating	Super High	rpm	1,350				1,460	
			High		1,020				1,180	
			Med.		780				1,000	
			Low		630				850	
			Silent		560				720	
	Fan speed regulator				5					
Remote controller model					SG13A	SG15C	SG13A	SG15C	SG13A	SG15C

NOTE: Test conditions are based on ISO 5151.

Cooling: Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Outdoor Dry-bulb temperature 35°C
Heating: Indoor Dry-bulb temperature 20°C
Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C

✻1 Measured under rated operating frequency.

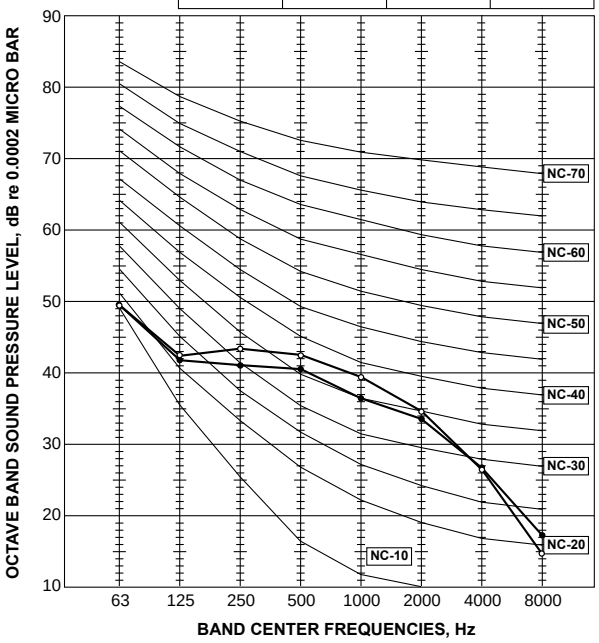
Specifications and rating conditions of main electric parts

Fuse	(F11)	T3.15AL250V
Horizontal vane motor	(MV1)	12 VDC
Vertical vane motor	(MV2)	12 VDC
i-see SENSOR MOTOR	(MT)	12 VDC
Varistor	(NR11)	S10K300E2K1
Terminal block	(TB)	3P

4 NOISE CRITERIA CURVE

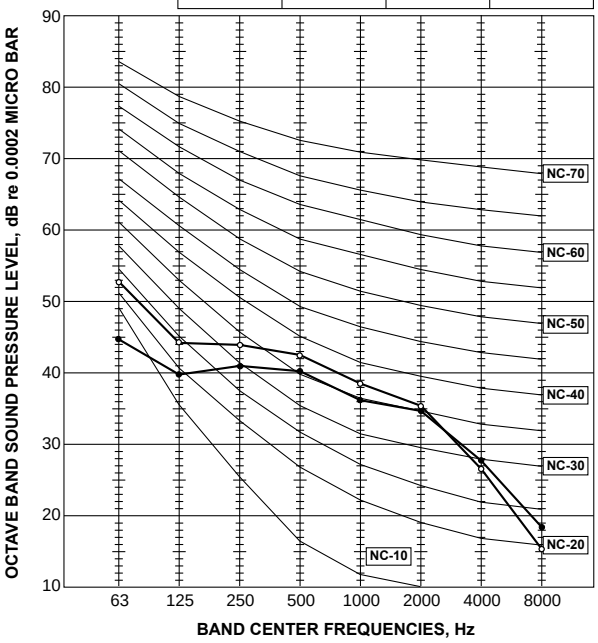
MSZ-FH25VE MSZ-FH35VE
MSZ-FH25VE2 MSZ-FH35VE2

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	42	●—●
	HEATING	44	○—○

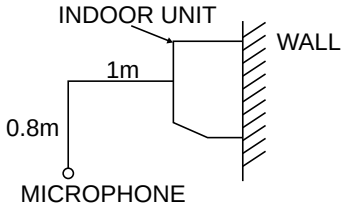


MSZ-FH50VE
MSZ-FH50VE2

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	44	●—●
	HEATING	46	○—○



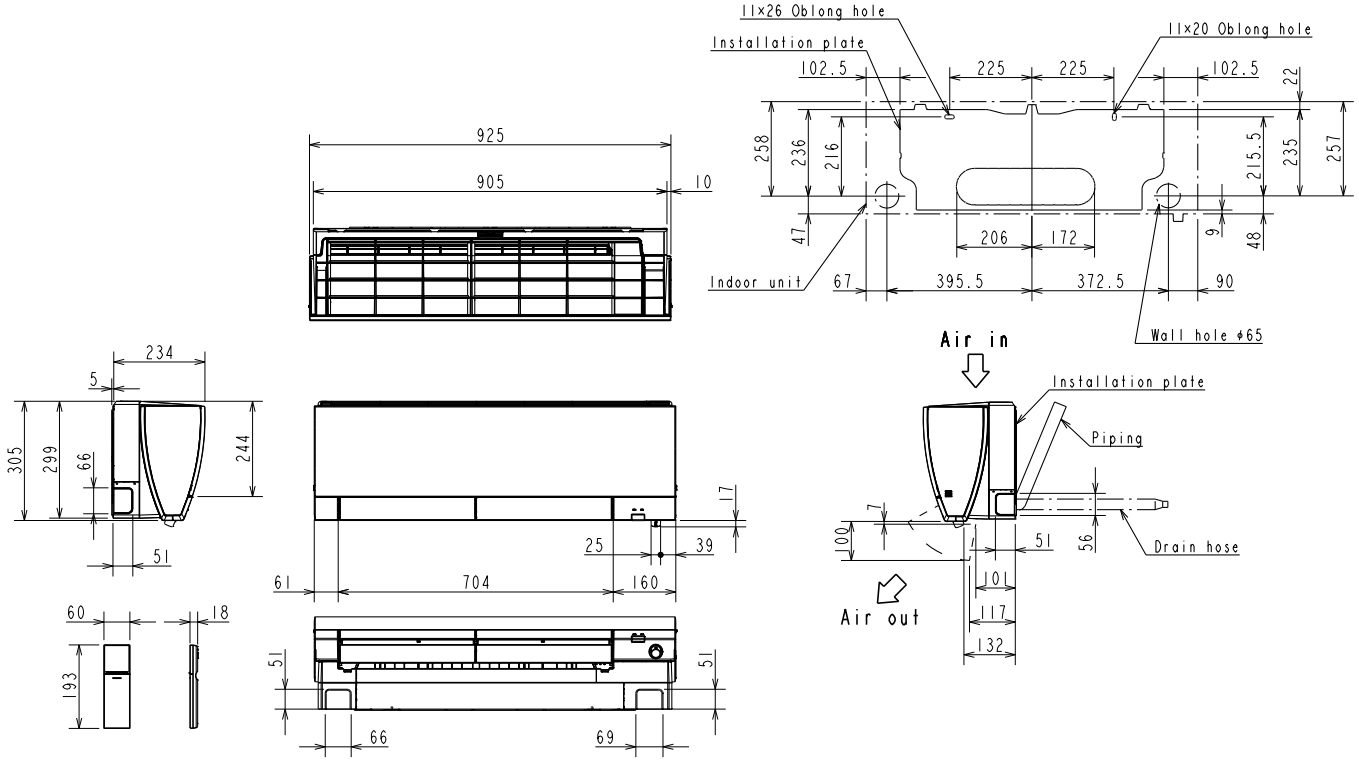
Test conditions
Cooling: Dry-bulb temperature 27 °C
Wet-bulb temperature 19 °C
Heating: Dry-bulb temperature 20 °C



5 OUTLINES AND DIMENSIONS

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

Unit: mm



MSZ-FH25VE MSZ-FH35VE
MSZ-FH25VE2 MSZ-FH35VE2

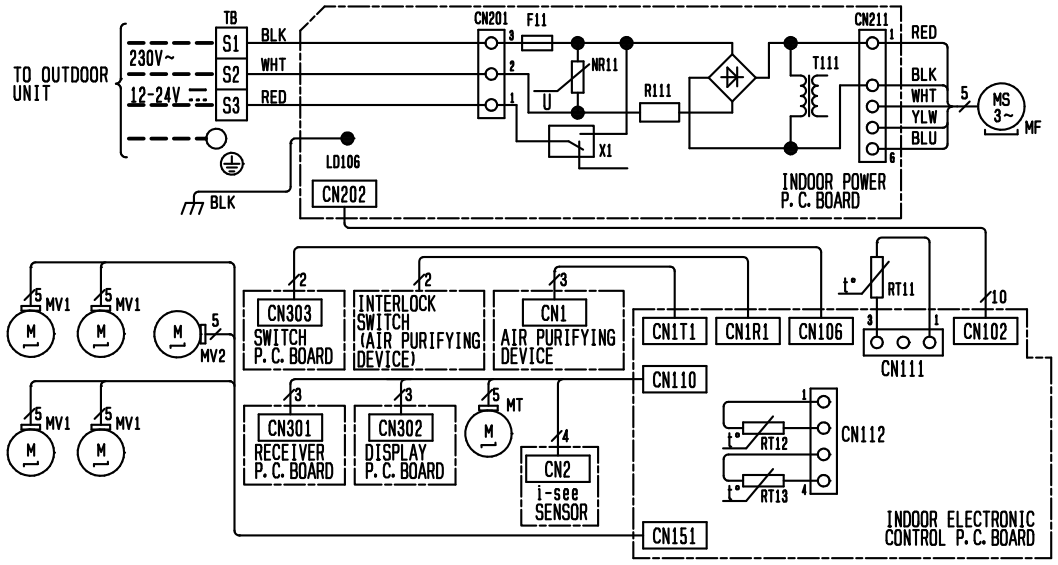
Piping	Insulation	ø37 O.D
	Liquid line	ø6.35 - 0.50 m (Flared connection ø6.35)
	Gas line	ø9.52 - 0.43 m (Flared connection ø9.52)
Drain hose		Insulation ø28 O.D Connected part ø16 O.D

MSZ-FH50VE
MSZ-FH50VE2

Piping	Insulation	ø37 O.D
	Liquid line	ø6.35 - 0.50 m (Flared connection ø6.35)
	Gas line	ø9.52 - 0.43 m (Flared connection ø12.7)
Drain hose		Insulation ø28 O.D Connected part ø16 O.D

6 WIRING DIAGRAM

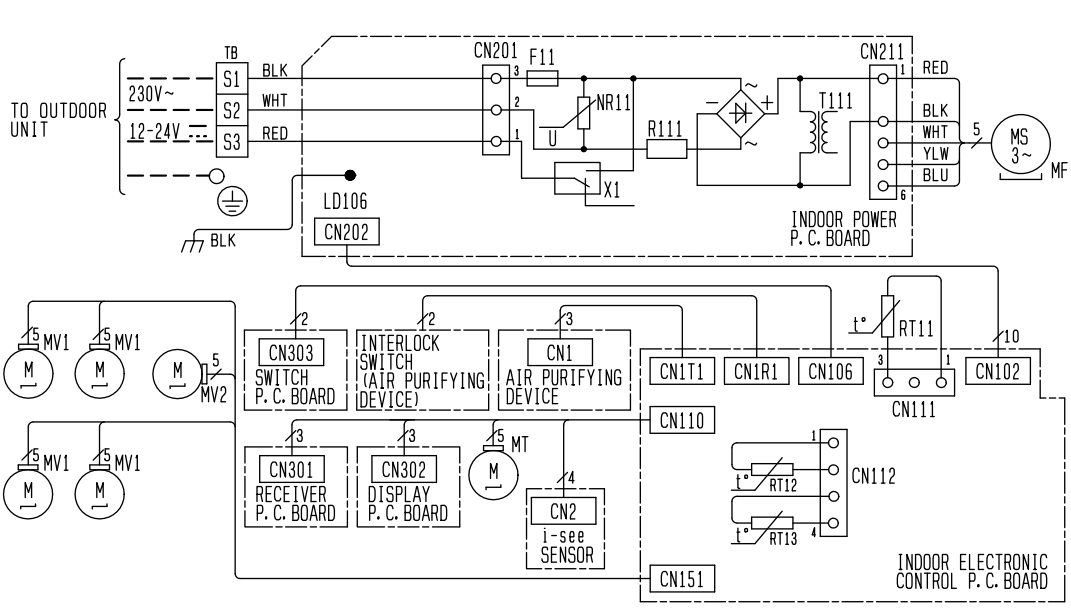
MSZ-FH25VE -E1 MSZ-FH35VE -E1 MSZ-FH50VE -E1



SYMBOL	NAME
F11	FUSE (T3.15AL250V)
MF	FAN MOTOR
MV1	VANE MOTOR (HORIZONTAL)
MV2	VANE MOTOR (VERTICAL)
MT	i-see SENSOR MOTOR
NR11	VARISTOR
R111	RESISTOR
RT11	ROOM TEMP. THERMISTOR
RT12	COIL TEMP. THERMISTOR (MAIN)
RT13	COIL TEMP. THERMISTOR (SUB)
T111	TRANSFORMER
TB	TERMINAL BLOCK
X1	RELAY

NOTES: 1. About the outdoor side electric wiring refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols indicate. ⊏⊐⊏⊐ : Terminal block
⊂⊃⊂⊃ : Connector

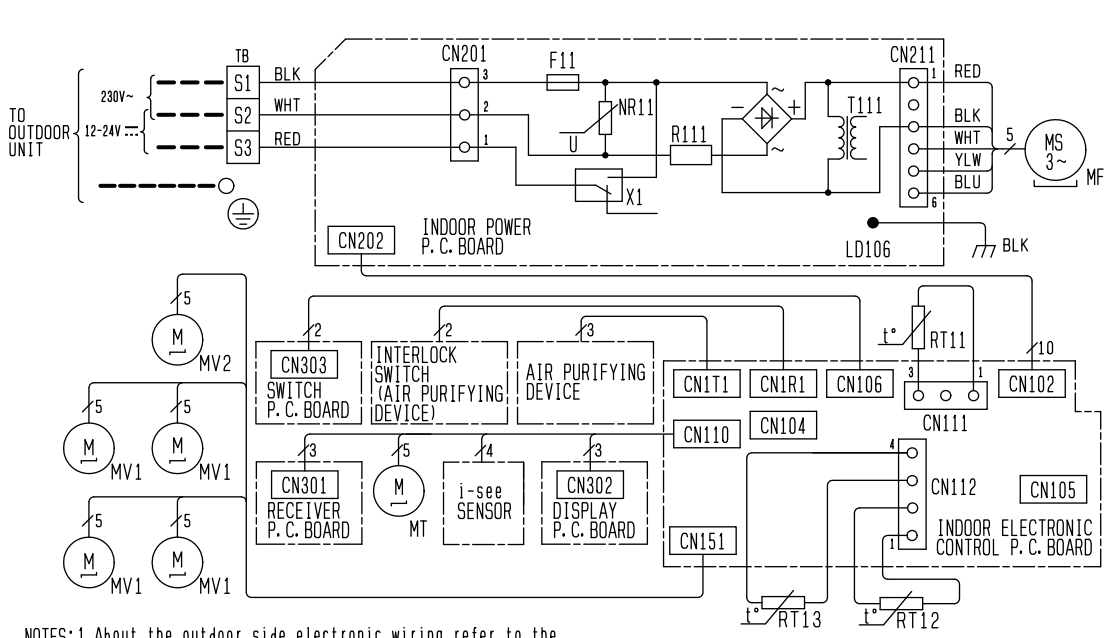
MSZ-FH25VE -ER1 MSZ-FH35VE -ER1 MSZ-FH50VE -ER1



SYMBOL	NAME
F11	FUSE (T3.15AL250V)
MF	FAN MOTOR
MV1	VANE MOTOR (HORIZONTAL)
MV2	VANE MOTOR (VERTICAL)
MT	i-see SENSOR MOTOR
NR11	VARISTOR
R111	RESISTOR
RT11	ROOM TEMP. THERMISTOR
RT12	COIL TEMP. THERMISTOR (MAIN)
RT13	COIL TEMP. THERMISTOR (SUB)
T111	TRANSFORMER
TB	TERMINAL BLOCK
X1	RELAY

NOTES: 1. About the outdoor side electronic wiring refer to the outdoor unit electronic wiring diagram for servicing.
2. Use copper conductors only. (For field wiring) ⊏⊐⊏⊐ : Terminal block
3. Symbols indicate. ⊂⊃⊂⊃ : Connector

MSZ-FH25VE2 -E1 MSZ-FH35VE2 -E1 MSZ-FH50VE2 -E1
MSZ-FH25VE2 -ER1 MSZ-FH35VE2 -ER1 MSZ-FH50VE2 -ER1



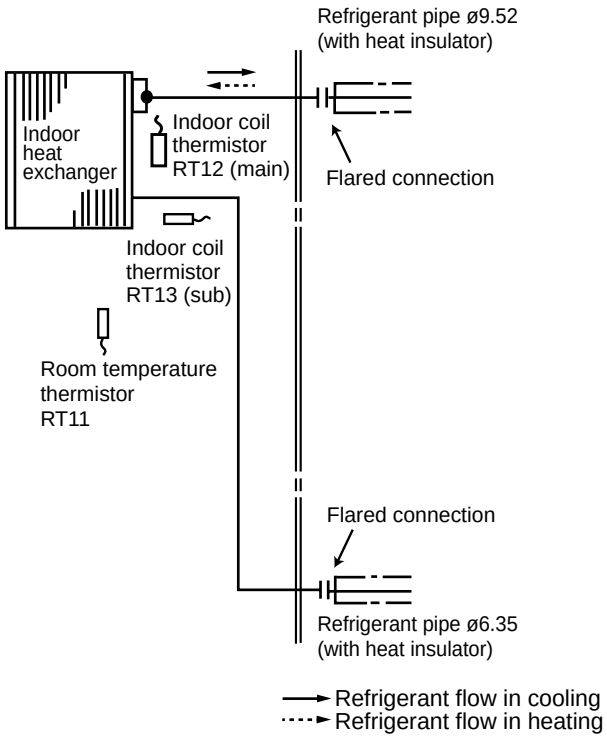
SYMBOL	NAME
F11	FUSE (T3.15AL250V)
MF	FAN MOTOR
MV1	VANE MOTOR (HORIZONTAL)
MV2	VANE MOTOR (VERTICAL)
MT	i-see SENSOR MOTOR
NR11	VARISTOR
R111	RESISTOR
RT11	ROOM TEMP. THERMISTOR
RT12	COIL TEMP. THERMISTOR (MAIN)
RT13	COIL TEMP. THERMISTOR (SUB)
T111	TRANSFORMER
TB	TERMINAL BLOCK
X1	RELAY

NOTES: 1. About the outdoor side electronic wiring refer to the outdoor unit electronic wiring diagram for servicing.
2. Use copper conductors only.
(For field wiring) : Terminal block
3. Symbols indicate. : Connector

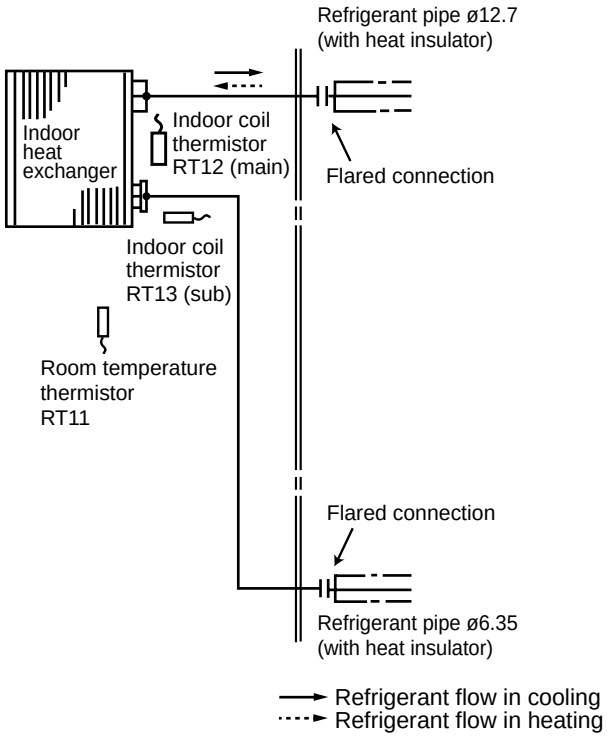
7 REFRIGERANT SYSTEM DIAGRAM

MSZ-FH25VE MSZ-FH35VE
MSZ-FH25VE2 MSZ-FH35VE2

Unit: mm



MSZ-FH50VE
MSZ-FH50VE2



8 SERVICE FUNCTIONS

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

8-1. TIMER SHORT MODE

For service, the following set time can be shortened by bridging JPG and JPS on the electronic control P.C. board. (Refer to 10-7.)
Set time: 3 minutes → 3 seconds (It takes 3 minutes for the compressor to start operation. However, the starting time is shortened by bridging JPG and JPS.)

8-2. HOW TO SET REMOTE CONTROLLER EXCLUSIVELY FOR A PARTICULAR INDOOR UNIT

A maximum of 4 indoor units with wireless remote controllers can be used in a room.
To operate the indoor units individually with each remote controller, assign a number to each remote controller according to the number of the indoor unit.

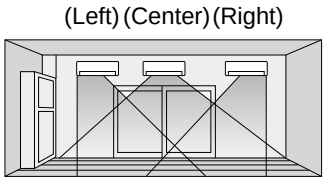
This setting can be set only when all the following conditions are met:
- The remote controller is powered OFF.
- Weekly timer is not set.
- Weekly timer is not being edited.

(1) Hold down [1~4] button on the remote controller for 2 seconds to enter the pairing mode.
(2) Press [1~4] button again and assign a number to each remote controller.
Each press of [1~4] button advances the number in the following order: 1 → 2 → 3 → 4.
(3) Press [EDIT/SEND SET] button to complete the pairing setting.

After you turn the breaker ON, the remote controller that first sends a signal to an indoor unit will be regarded as the remote controller for the indoor unit.
Once they are set, the indoor unit will only receive the signal from the assigned remote controller afterwards.

8-3. SETTING THE INSTALLATION POSITION

Be sure to set the remote controller according to the installed position of the indoor unit.
Installation position:
Left: Distance to objects (wall, cabinet, etc.) is less than 50 cm to the left
Center: Distance to objects (wall, cabinet, etc.) is more than 50 cm to the left and right
Right: Distance to objects (wall, cabinet, etc.) is less than 50 cm to the right



The installation position can be set only when all the following conditions are met:
- The remote controller is powered OFF.
- Weekly timer is not set.
- Weekly timer is not being edited.

(1) Hold down [WIDE VANE] button on the remote controller for 2 seconds to enter the position setting mode.
(2) Select the target installation position by pressing [WIDE VANE] button. (Each press of the [WIDE VANE] button displays the positions in order: center → right → left.)
(3) Press [EDIT/SEND SET] button to complete the position setting.

Installation position	Left	Center	Right
Remote controller display			

8-4. AUTO RESTART FUNCTION

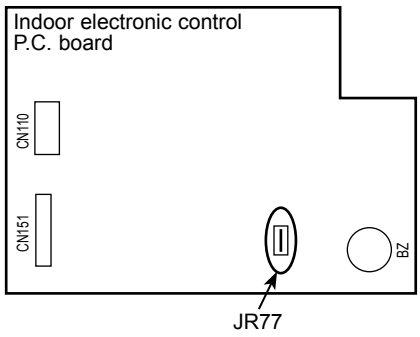
When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control P.C. board. “AUTO RESTART FUNCTION” automatically starts operation in the same mode just before the shutoff of the main power.

Operation

① If the main power has been cut, the operation settings remain.
② After the power is restored, the unit restarts automatically according to the memory.
(However, it takes at least 3 minutes for the compressor to start running.)

How to disable “AUTO RESTART FUNCTION”

① Turn off the main power for the unit.
② Cut the jumper wire to JR77 on the indoor electronic control P.C. board. (Refer to 10-7.)



NOTE:

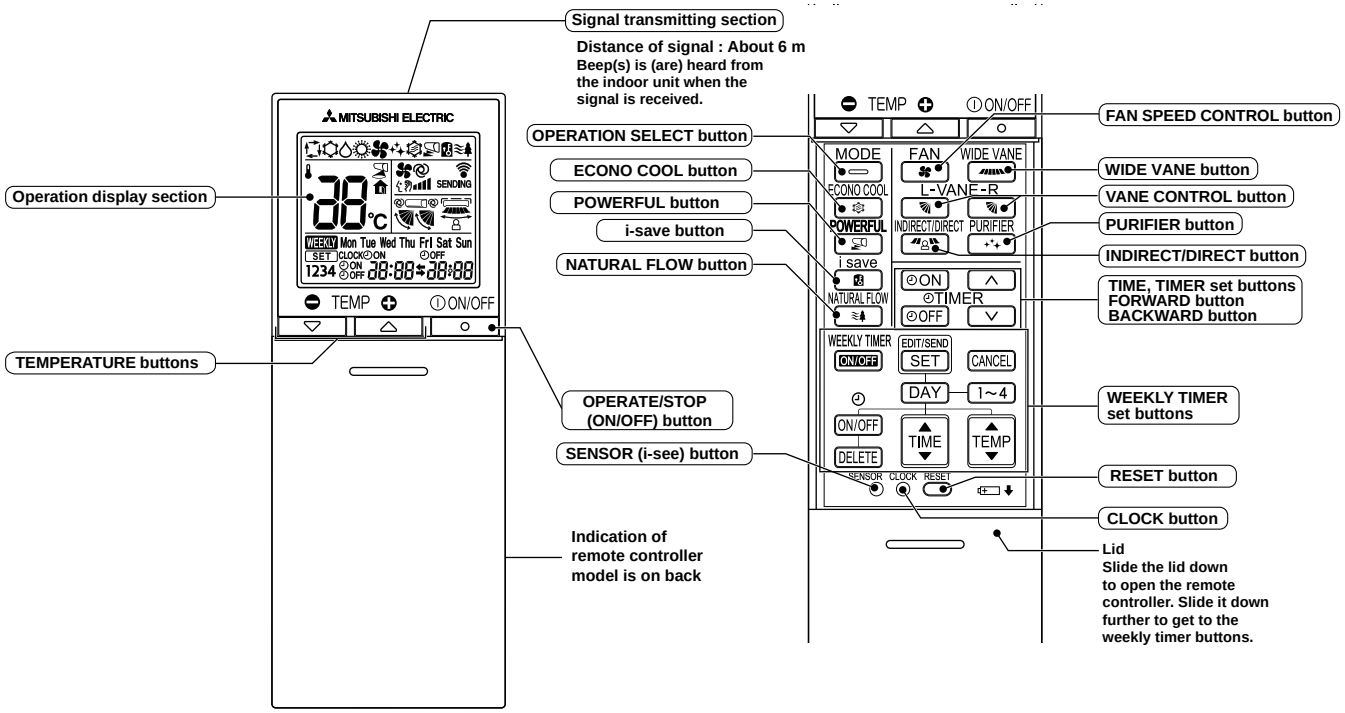
- The operation settings are memorized when 10 seconds have passed after the indoor unit was operated with the remote controller.
- If main power is turned OFF or a power failure occurs while AUTO START/STOP timer is active, the timer setting is cancelled.
- If the unit has been turned OFF with the remote controller before power failure, the auto restart function does not work as the power button of the remote controller is OFF.
- To prevent the breaker from tripping OFF due to the rush of starting current, systematize other home appliance not to turn ON at the same time.
- When some air conditioners are connected to the same supply system, if they are operated before power failure, the starting current of all the compressors may flow simultaneously at restart.
  Therefore, the special counter-measures are required to prevent the main voltage-drop or the rush of the starting current by adding to the system that allows the units to start one by one.

9 MICROPROCESSOR CONTROL

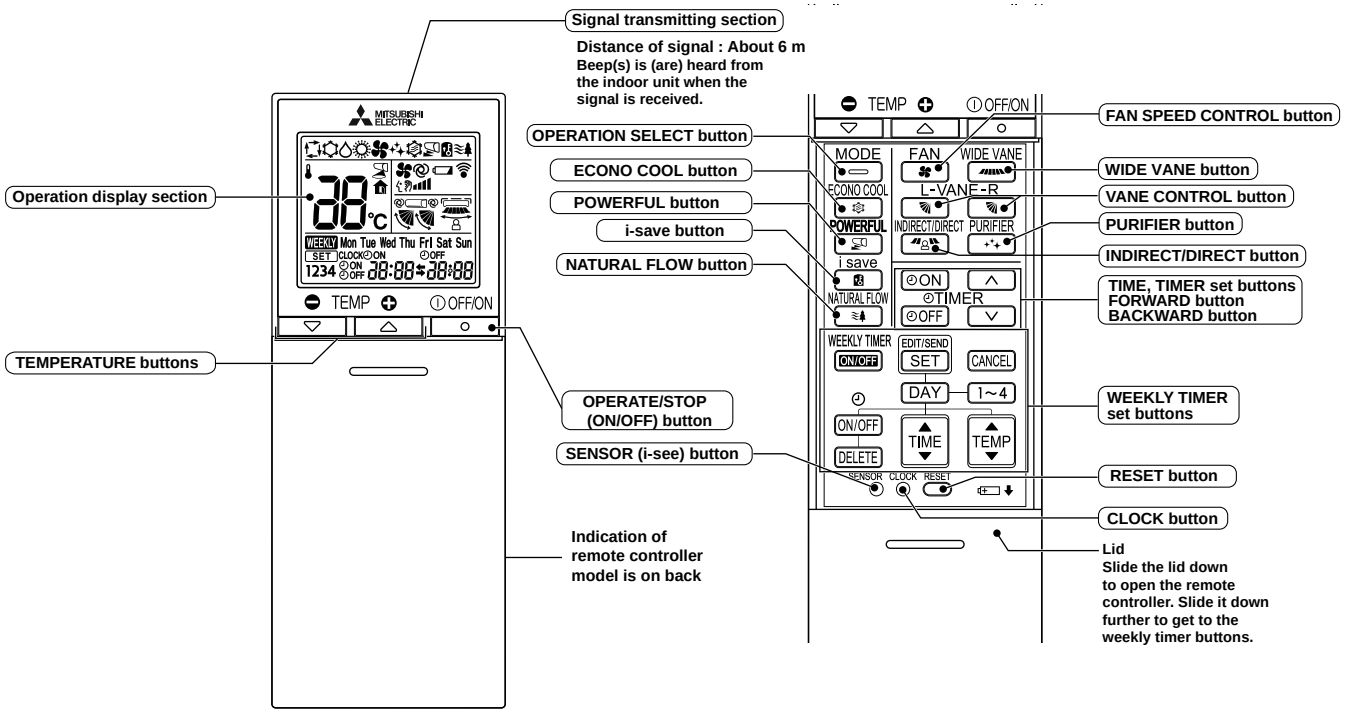
MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

WIRELESS REMOTE CONTROLLER

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE



MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2



NOTE: Last setting will be stored after the unit is turned OFF with the remote controller. Indoor unit receives the signal of the remote controller with beeps.

INDOOR UNIT DISPLAY SECTION

Operation Indicator lamp

The operation indicator at the right side of the indoor unit indicates the operation state.

•The following indication applies regardless of shape of the indication.

Indication	Operation state	Room temperature
☀ ☼	Standby mode (Only during multi system operation)	—

☀ Lighted
☼ Blinking
○ Not lighted

9-1. COOL (☼) OPERATION

(1) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select COOL mode with OPERATION SELECT button.
(3) Press TEMPERATURE buttons TEMP ⊖ or ⊕ button to select the desired temperature. The setting range is 16 - 31°C.

1. Coil frost prevention

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the coil from frosting.
When the temperature of indoor heat exchanger becomes too low, the coil frost prevention mode works.
The indoor fan operates at the set speed and the compressor stops. This mode continues until the temperature of indoor heat exchanger rises.

2. Low outside temperature operation

When the outside temperature is lower, low outside temperature operation starts, and the outdoor fan slows or stops.

3. Indoor fan speed control

When the thermostat turns OFF, the indoor fan operates very Low to reduce power consumption.
When the room temperature rises and the thermostat is ON, the indoor fan operates according to the settings on the remote controller.

9-2. DRY (△) OPERATION

(1) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select DRY mode with OPERATION SELECT button.
(3) The set temperature is determined from the initial room temperature.

1. Coil frost prevention

Coil frost prevention works the same way as that in COOL mode. (9-1.1.)

2. Low outside temperature operation

Low outside temperature operation works the same way as that in COOL mode. (9-1.2.)

3. Indoor fan speed control

Indoor fan speed control works the same way as that in COOL mode. (9-1.3.)

9-3. FAN (🌀) OPERATION

(1) OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select FAN mode with OPERATION SELECT button.
(3) Select the desired fan speed. When AUTO, it becomes Low.
Only indoor fan operates.
Outdoor unit does not operate.

9-4. HEAT (☼) OPERATION

(1) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select HEAT mode with OPERATION SELECT button.
(3) Press TEMPERATURE buttons TEMP ⊖ or ⊕ button to select the desired temperature. The setting range is 16 - 31°C.

1. Cold air prevention control

When the compressor is not operating or is starting, and the temperature of indoor heat exchanger and/or the room temperature is low or when defrosting is being done, the indoor fan will stop or rotate in Very Low speed.

2. High pressure protection

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the condensing pressure from increasing excessively.
When the temperature of indoor heat exchanger becomes too high, the high pressure protection works.
The indoor fan operates following the cold air prevention control. This mode continues until the temperature of indoor heat exchanger falls.

3. Defrosting

Defrosting starts when the temperature of outdoor heat exchanger becomes too low.
The compressor stops once, the indoor/outdoor fans stop, the 4-way valve reverses, and the compressor re-starts.
This mode continues until the temperature of outdoor heat exchanger rises or the fixed time passes.

9-5. AUTO CHANGE OVER ··· AUTO MODE OPERATION

Once desired temperature is set, unit operation is switched automatically between COOL and HEAT operation.

Mode selection

(1) Initial mode
When unit starts the operation with AUTO operation from OFF:
- If the room temperature is higher than the set temperature, operation starts in COOL mode.
- If the room temperature is equal to or lower than the set temperature, operation starts in HEAT mode.

(2) Mode change
COOL mode changes to HEAT mode when about 15 minutes have passed with the room temperature 1°C below the set temperature.
HEAT mode changes to COOL mode when about 15 minutes have passed with the room temperature 1°C above the set temperature.

NOTE 1

If two or more indoor units are operating in multi system, there might be a case that the indoor unit, which is operating in ▭ (AUTO), cannot change over to the other operating mode (COOL ↔ HEAT) and becomes a state of standby. Refer to **NOTE 2 "FOR MULTI SYSTEM AIR CONDITIONER"**.

NOTE 2

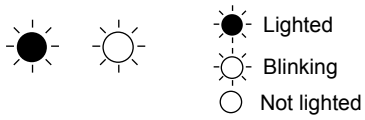
FOR MULTI SYSTEM AIR CONDITIONER

OUTDOOR UNIT: MXZ series

Multi system air conditioner can connect two or more indoor units with one outdoor unit.

- When you try to operate two or more indoor units with one outdoor unit simultaneously, one for the cooling and the others for heating, the operation mode of the indoor unit that operates first is selected. Other indoor units cannot operate, and operation indicator lamp flashes as shown in the figure below. In this case, please set all the indoor units to the same operation mode.

OPERATION INDICATOR



- When indoor unit starts the operation while the defrosting of outdoor unit is being done, it takes a few minutes (max. 10 minutes) to blow out the warm air.
- In the heating operation, though indoor unit that does not operate may get warm or the sound of refrigerant flowing may be heard, they are not malfunction. The reason is that the refrigerant continuously flows into it.

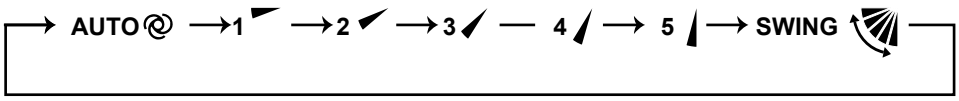
9-6. AUTO VANE OPERATION

1. Horizontal vane

(1) Vane motor drive

These models are equipped with stepping motors for the horizontal vanes. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approximately 12 V) transmitted from indoor microprocessor.

(2) The horizontal vane angle and mode change as follows by pressing VANE CONTROL (L-VANE-R) button.



NOTE: The right and left horizontal vanes set to the same level may not align perfectly.

(3) Positioning

To confirm the standard position, the vane moves until it touches the vane stopper. Then the vane is set to the selected angle.

Confirmation of standard position is performed in the following cases:

(a) When the operation starts or finishes (including timer operation).
(b) When the test run starts.
(c) When standby mode (only during multi system operation) starts or finishes.

(4) VANE AUTO (@) mode

In VANE AUTO mode, the microprocessor automatically determines the vane angle to make the optimum room temperature distribution.

In COOL and DRY operation
Vane angle is fixed to Horizontal position.

In HEAT operation
Vane angle is fixed to Angle 4.

(5) STOP (operation OFF) and ON TIMER standby

In the following cases, the horizontal vane returns to the closed position.

(a) When OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button is pressed (POWER OFF).
(b) When the operation is stopped by the emergency operation.
(c) When ON TIMER is ON standby.

(6) Dew prevention

During COOL or DRY operation with the vane angle at Angle 4 or 5 when the compressor cumulative operation time exceeds 1 hour, the vane angle automatically changes to Angle 3 for dew prevention.

(7) SWING ( ) mode

By selecting SWING mode with VANE CONTROL button, the horizontal vanes swing vertically.
When COOL, DRY or FAN mode is selected, only the upper vane swings.

(8) Cold air prevention in HEAT operation

The horizontal vane position is set to Upward.

NOTE: When 2 or more indoor units are operated with multi outdoor unit, even if any indoor unit turns thermostat off, this control does not work in the indoor unit.

(9) ECONO COOL ( ) operation (ECONOmical operation)

When ECONO COOL button is pressed in COOL mode, set temperature is automatically set 2°C higher by the microprocessor. However, the temperature on the LCD screen on the remote controller is not changed. Also the horizontal vane swings in various cycle.

SWING operation makes you feel cooler than set temperature. So, even though the set temperature is higher, the air conditioner can keep comfort. As a result, energy can be saved.

To cancel this operation, select a different mode or press one of the following buttons in ECONO COOL operation: ECONO COOL, VANE CONTROL, POWERFUL or NATURAL FLOW button.

(10) POWERFUL ( ) operation

The air conditioner automatically adjusts the fan speed and the set temperature, and operates the POWERFUL mode. The POWERFUL mode is cancelled automatically 15 minutes after operation starts, or when POWERFUL button is pressed once again within 15 minutes after operation starts. The operation mode returns to the mode prior to POWERFUL operation. To cancel this operation manually, select a different mode or press one of the following buttons within 15 minutes after operation starts: OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**), ECONO COOL, FAN SPEED CONTROL, NATURAL FLOW or i-save button.

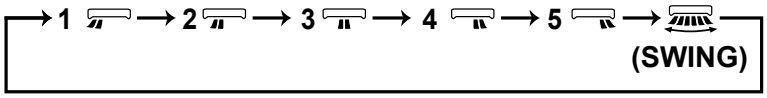
2. Vertical vane

(1) Vane motor drive

These models are equipped with a stepping motor for the vertical vane. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approximately 12 V) transmitted from microprocessor.

(2) The vertical vane angle and mode change as follows by pressing WIDE VANE CONTROL button.

(3) Positioning



To confirm the standard position, the vane moves until it touches the vane stopper. Then the vane is set to the selected angle.

Confirmation of standard position is performed in the following cases:

(a) OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button is pressed (POWER ON).

(4) SWING ( ) MODE

By selecting SWING mode with WIDE VANE CONTROL button, the vertical vane swings horizontally. The remote controller displays " ". Swing mode is cancelled when WIDE MODE CONTROL button is pressed once again.

9-7. TIMER OPERATION

1. How to set the time

(1) Check that the current time is set correctly.

NOTE: Timer operation will not work without setting the current time. Initially “0:00” blinks at the current time display of TIME MONITOR, so set the current time correctly with CLOCK button.

How to set the current time

(a) Press the CLOCK button.

(b) Press the TIME SET buttons (∧ and ∨) to set the current time.

- Each time FORWARD button (∧) is pressed, the set time increases by 1 minute, and each time BACKWARD button (∨) is pressed, the set time decreases by 1 minute.
- Pressing those buttons longer, the set time increases/decreases by 10 minutes.

(c) Press the CLOCK set button.

(2) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button to start the air conditioner.

(3) Set the time of timer.

ON timer setting

(a) Press ON TIMER button(ON) during operation.

(b) Set the time of the timer using TIME SET buttons (∧ and ∨). ※

OFF timer setting

(a) Press OFF TIMER button (OFF) during operation.

(b) Set the time of the timer using TIME SET buttons (∧ and ∨). ※

※ Each time FORWARD button (∧) is pressed, the set time increases by 10 minutes: each time BACKWARD button (∨) is pressed, the set time decreases by 10 minutes.

2. To release the timer

To release ON timer, press ON TIMER button (ON).

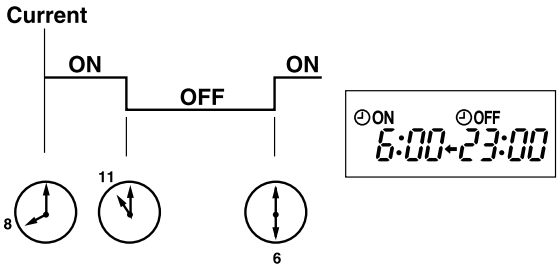
To release OFF timer, press OFF TIMER button(OFF).

TIMER is cancelled and the display of set time disappears.

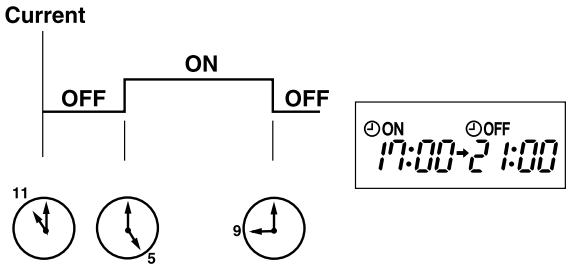
PROGRAM TIMER

- OFF timer and ON timer can be used in combination. The set time that is reached first will operate first.
- “➡” and “⬅” display shows the order of OFF timer and ON timer operation.

(Example 1) The current time is 8:00 PM.
The unit turns off at 11:00 PM, and on at 6:00 AM.



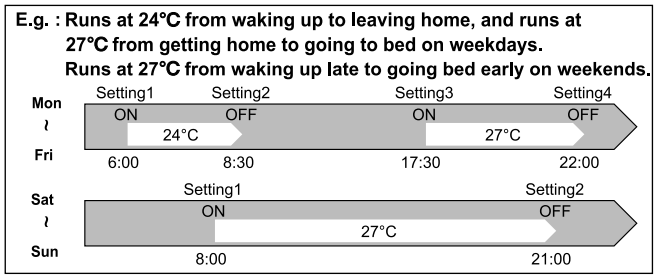
(Example 2) The current time is 11:00 AM.
The unit turns on at 5:00 PM, and off at 9:00 PM.



NOTE: If the main power is turned OFF or a power failure occurs while ON/OFF timer is active, the timer setting is cancelled. As these models are equipped with an auto restart function, the air conditioner starts operating with timer cancelled when power is restored.

9-8. WEEKLY TIMER OPERATION

• A maximum of 4 ON or OFF timers can be set for individual days of the week.
• A maximum of 28 ON or OFF timers can be set for a week.



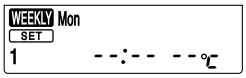
NOTE:

• The simple ON/OFF timer setting is available while the weekly timer is on. In this case, the ON/OFF timer has priority over the weekly timer; the weekly timer operation will start again after the simple ON/OFF timer is complete.
• When the weekly timer is set, temperature cannot be set to 10°C.
• The weekly timer operation and i-save operation cannot be used together.

1. How to set the weekly timer

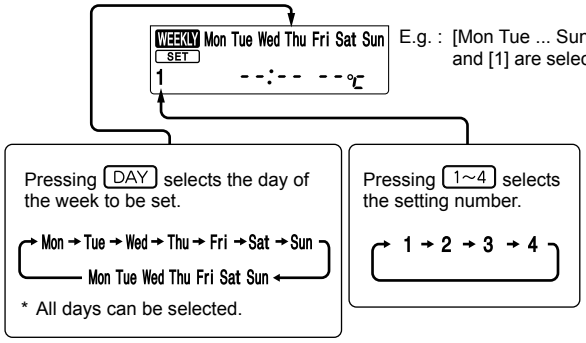
* Make sure that the current time and day are set correctly.

(1) Press EDIT/SEND SET button to enter the weekly timer setting mode.

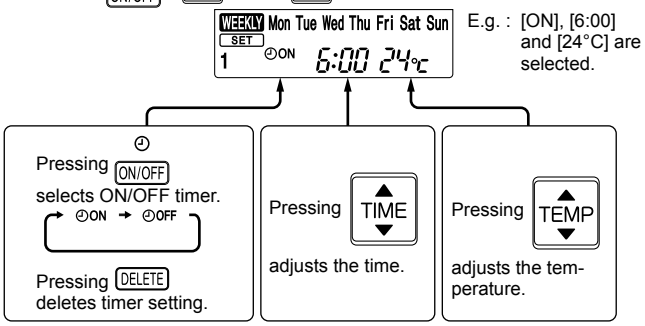


* SET blinks.

(2) Press DAY and 1~4 buttons to select setting day and number.


WEEKLY Mon Tue Wed Thu Fri Sat Sun
SET
1
--:-- --℃
E.g. : [Mon Tue ... Sun] and [1] are selected.
Pressing DAY selects the day of the week to be set.
Mon → Tue → Wed → Thu → Fri → Sat → Sun
Mon Tue Wed Thu Fri Sat Sun
* All days can be selected.
Pressing 1~4 selects the setting number.
1 → 2 → 3 → 4

(3) Press ON/OFF , TIME , and TEMP buttons to set ON/OFF, time, and temperature.

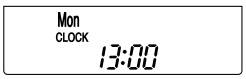

WEEKLY Mon Tue Wed Thu Fri Sat Sun
SET
1
ON
6:00 24℃
E.g. : [ON], [6:00] and [24°C] are selected.
Pressing ON/OFF selects ON/OFF timer.
ON → OFF
Pressing DELETE deletes timer setting.
Pressing TIME adjusts the time.
Pressing TEMP adjusts the temperature.

* Hold down the button to change the time quickly.

* The temperature can be set between 16°C and 31°C at weekly timer.

Press DAY and 1~4 buttons to continue setting the timer for other days and/or numbers.

(4) Press EDIT/SEND SET button to complete and transmit the weekly timer setting.



* SET which was blinking goes out, and the current time will be displayed.

NOTE:

- Press EDIT/SEND SET button to transmit the setting information of weekly timer to the indoor unit. Point the remote controller toward the indoor unit for 3 seconds.
- When setting the timer for more than one day of the week or one number, EDIT/SEND SET button does not have to be pressed per each setting. Press EDIT/SEND SET button once after all the settings are complete. All the weekly timer settings will be saved.
- Press EDIT/SEND SET button to enter the weekly timer setting mode, and press and hold DELETE button for 5 seconds to erase all weekly timer settings. Point the remote controller toward the indoor unit.

(5) Press WEEKLY TIMER ON/OFF button to turn the weekly timer ON. (WEEKLY lights.)

•When the weekly timer is ON, the day of the week whose timer setting is complete, will light.

Press WEEKLY TIMER ON/OFF button again to turn the weekly timer OFF. (WEEKLY goes out.)

NOTE:

The saved settings will not be cleared when the weekly timer is turned OFF.

2. Checking weekly timer setting

(1) Press EDIT/SEND SET button to enter the weekly timer setting mode.

*SET blinks.

(2) Press DAY or 1~4 buttons to view the setting of the particular day or number.

(3) Press CANCEL button to exit the weekly timer setting.

NOTE:

When all days of the week are selected to view the settings and a different setting is included among them, --:-- --℃ will be displayed.

9-9. i-see CONTROL (🪑) MODE

In the i-see control mode, the room temperature is controlled based on the sensible temperature.

(1) Press SENSOR button with a thin instrument during COOL, DRY, HEAT and AUTO mode to activate i-see control mode (🪑). The default setting is “active”.

(2) Press SENSOR button again to activate ABSENCE DETECTION (🏠).

(3) Press SENSOR button again to release i-see control mode.

ABSENCE DETECTION (🏠)

This function automatically changes the operation to energy-saving operation when nobody is in the room.

(1) To activate this function, press SENSOR button until 🏠 appears on the operation display of the remote controller during the i-see control mode.

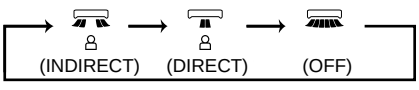
(2) Press SENSOR button again to release ABSENCE DETECTION.

9-10. INDIRECT/DIRECT MODE

The INDIRECT/DIRECT mode offers finely-tuned operation by locating where an occupant is in the room.

(1) Press INDIRECT/DIRECT button during COOL, DRY, HEAT or AUTO mode to activate INDIRECT/DIRECT mode. This mode is only available when the i-see control mode is effective.

(2) Each press of INDIRECT/DIRECT button changes INDIRECT/DIRECT in the following order:



(INDIRECT): An occupant will be less exposed to direct airflow.

(DIRECT) : Mainly the vicinity of an occupant will be air-conditioned.

NOTE:

- Horizontal and vertical airflow directions will be automatically selected.
- If you still feel uncomfortable with the air direction determined by the INDIRECT mode, adjust the air direction manually.
- Cancelling the i-see control mode automatically cancels the INDIRECT/DIRECT mode. INDIRECT/DIRECT mode is also cancelled when the VANE or WIDE VANE buttons is pressed.
- Do not touch the i-see SENSOR. This may cause malfunction of the i-see SENSOR.

9-11. NATURAL FLOW (≋) OPERATION

In NATURAL FLOW operation, air flow will become more like natural wind. An occupant will not be directly exposed to the air flow and feel more comfortable.

(1) Press NATURAL FLOW button during COOL or FAN mode to start NATURAL FLOW operation.
(2) Press NATURAL FLOW button again to cancel NATURAL FLOW operation.
• NATURAL FLOW operation is also cancelled when the POWERFUL or ECONO COOL button is pressed.

NOTE: As the fan speed changes constantly during NATURAL FLOW operation, the sound of air flow, wind velocity and air flow temperature also change. This is not a malfunction.

9-12. AIR PURIFYING (✨) OPERATION

In the AIR PURIFYING operation, the indoor unit built-in device reduces airborne fungi, viruses, mold, and allergens.

(1) Press PURIFIER button to start AIR PURIFYING operation.
• AIR PURIFYING lamp turns on. (Display section)
(2) Press PURIFIER button again to cancel AIR PURIFYING operation.
• AIR PURIFYING lamp turns off. (Display section)

NOTE:

• Never touch the air purifying device during operation. Although the air purifying device is safety-conscious design, touching this device could be the cause of trouble as this device discharge high voltage electricity.
• A "hissing" sound may be heard during the air purifying operation. This sound is produced when plasma is being discharged. This is not a malfunction.
• AIR PURIFYING lamp does not turn on if the front panel is not closed completely.

9-13. i-save (i-save) OPERATION

1. How to set i-save operation

(1) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button.
(2) Select COOL, HEAT or ECONO COOL mode.
(3) Press i-save button.
(4) Set the temperature, fan speed, and airflow direction for i-save operation.

NOTE:

• i-save operation cannot be selected during DRY or AUTO mode operation.
• The setting range of HEAT mode i-save operation is 10°C and 16 - 31°C.
• 2 groups of setting can be saved. (One for COOL/ECONO COOL, one for HEAT)
• i-save operation and the weekly timer operation cannot be used together.

2. How to cancel operation

• Press i-save button again.
• i-save operation can also be cancelled by pressing POWERFUL button or OPERATION SELECT button to change the operation mode.
The same setting is select from the next time by simply pressing i-save button.

9-14. EMERGENCY/TEST OPERATION

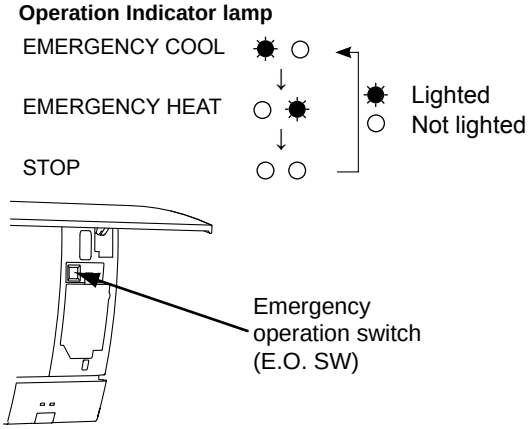
In the case of test run operation or emergency operation, use EMERGENCY OPERATION switch on the right side of the indoor unit. Emergency operation is available when the remote controller is missing or has failed, or when the batteries in the remote controller are running down. The unit will start and OPERATION INDICATOR lamp will light up.
The first 30 minutes of operation is the test run operation. This operation is for servicing. The indoor fan runs at High speed and the temperature control does not work.
After 30 minutes of test run operation, the system shifts to EMERGENCY COOL/HEAT MODE with a set temperature of 24°C. The fan speed shifts to Med.
The coil frost prevention works even in the test run or the emergency operation.
In the test run or emergency operation, the horizontal vane operates in VANE AUTO (@) mode.
Emergency operation continues until EMERGENCY OPERATION switch is pressed once or twice or the unit receives any signal from the remote controller. In the latter case, normal operation will start.

NOTE: Do not press EMERGENCY OPERATION switch during normal operation.

Operation mode	COOL/HEAT
Set temperature	24°C
Fan speed	Med.
Horizontal vane	Auto

The operation mode is indicated by the Operation Indicator lamp as following

Operation Indicator lamp



9-15. 3-MINUTE TIME DELAY OPERATION

When the system turns OFF, compressor will not restart for 3 minutes as 3-minute time delay function operates to protect compressor from overload.

10 TROUBLESHOOTING

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

10-1. CAUTIONS ON TROUBLESHOOTING

1. Before troubleshooting, check the following

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and/or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the P.C. board.
3) When removing the P.C. board, hold the edge of the board with care NOT to apply stress on the components.
4) When connecting or disconnecting the connectors, hold the connector housing. DO NOT pull the lead wires.

<Incorrect> <Correct>

Lead wiring **Connector housing**

3. Troubleshooting procedure

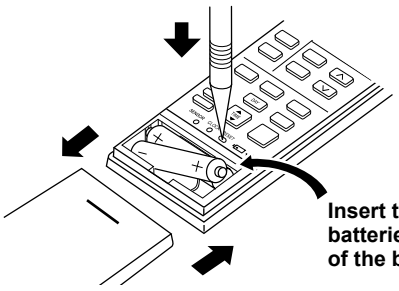
1) Check if the OPERATION INDICATOR lamp on the indoor unit is flashing ON and OFF to indicate an abnormality. To make sure, check how many times the OPERATION INDICATOR lamp is flashing ON and OFF before starting service work.
2) Before servicing, check that the connector and terminal are connected properly.
3) When the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) When troubleshooting, Refer to 10-2, 10-3 and 10-4.

4. How to replace batteries

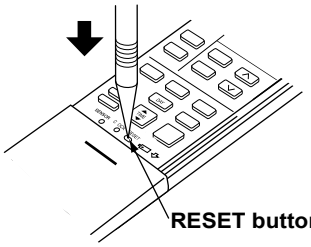
Weak batteries may cause the remote controller malfunction.
In this case, replace the batteries to operate the remote controller normally.

① Remove the front lid and insert batteries. Then reattach the front lid.

② Press RESET button with a thin instrument, and then use the remote controller.



Insert the negative pole of the batteries first. Check if the polarity of the batteries is correct.



RESET button

NOTE: 1. If RESET button is not pressed, the remote controller may not operate correctly.
2. This remote controller has a circuit to automatically reset the microcomputer when batteries are replaced. This function is equipped to prevent the microcomputer from malfunctioning due to the voltage drop caused by the battery replacement.
3. Do not use the leaking batteries.

10-2. FAILURE MODE RECALL FUNCTION

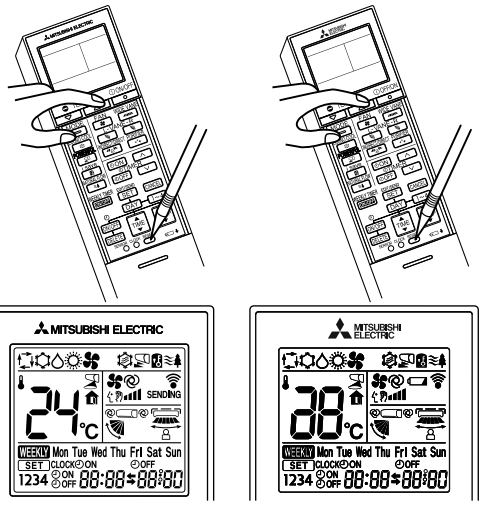
Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (10-4.) disappears, the memorized failure details can be recalled.

1. Flow chart of failure mode recall function for the indoor/outdoor unit

MSZ-FH25VE **MSZ-FH25VE2**
MSZ-FH35VE **MSZ-FH35VE2**
MSZ-FH50VE **MSZ-FH50VE2**



Operational procedure

The cause of abnormality cannot be found because the abnormality does not recur.

Setting up the failure mode recall function

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TEMP ⊕ button on the remote controller at the same time, press RESET button.
② First, release RESET button.
Hold down the other two buttons for another 3 seconds. Make sure that the indicators on the LCD screen shown in the right figure are all displayed. Then release the buttons.

Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

※1 Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

Judgment of indoor/outdoor abnormality

Does POWER lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal. Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

No (OFF) → Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that cannot be recalled with this way.
Check if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function.

NOTE: It takes up to 1 minute to indicate the outdoor unit abnormality. Even if the OPERATION INDICATOR lamp is not lighting, keep checking at least 1 minute or longer.

Yes (Blinks)

Before blinking, does POWER lamp stay ON for 3 seconds?
When it stays ON for 3 seconds (without beep): The outdoor unit is abnormal.

Yes → The outdoor unit is abnormal.
Check the blinking pattern, and identify the abnormal point by referring to the outdoor unit failure mode table. (Refer to outdoor unit service manual.)
Make sure to check at least 2 consecutive blinking cycles. ※3

No → The indoor unit is abnormal.
Check the blinking pattern, and identify the abnormal point by referring to the indoor unit failure mode table. (Refer to 10-2.4)
Make sure to check at least 2 consecutive blinking cycles. ※2

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

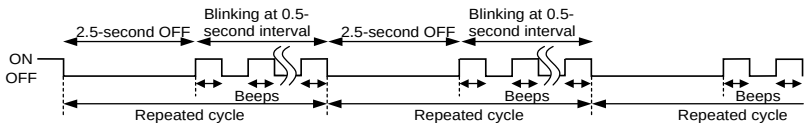
Repair the failure parts.

Deleting the memorized abnormal condition

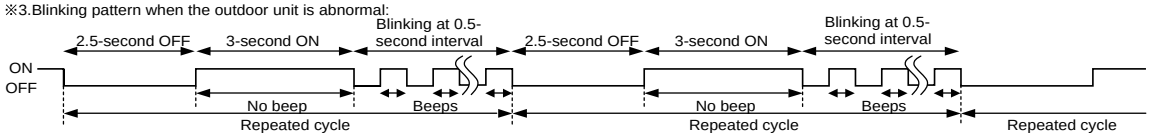
① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
② Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted. ※4
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:

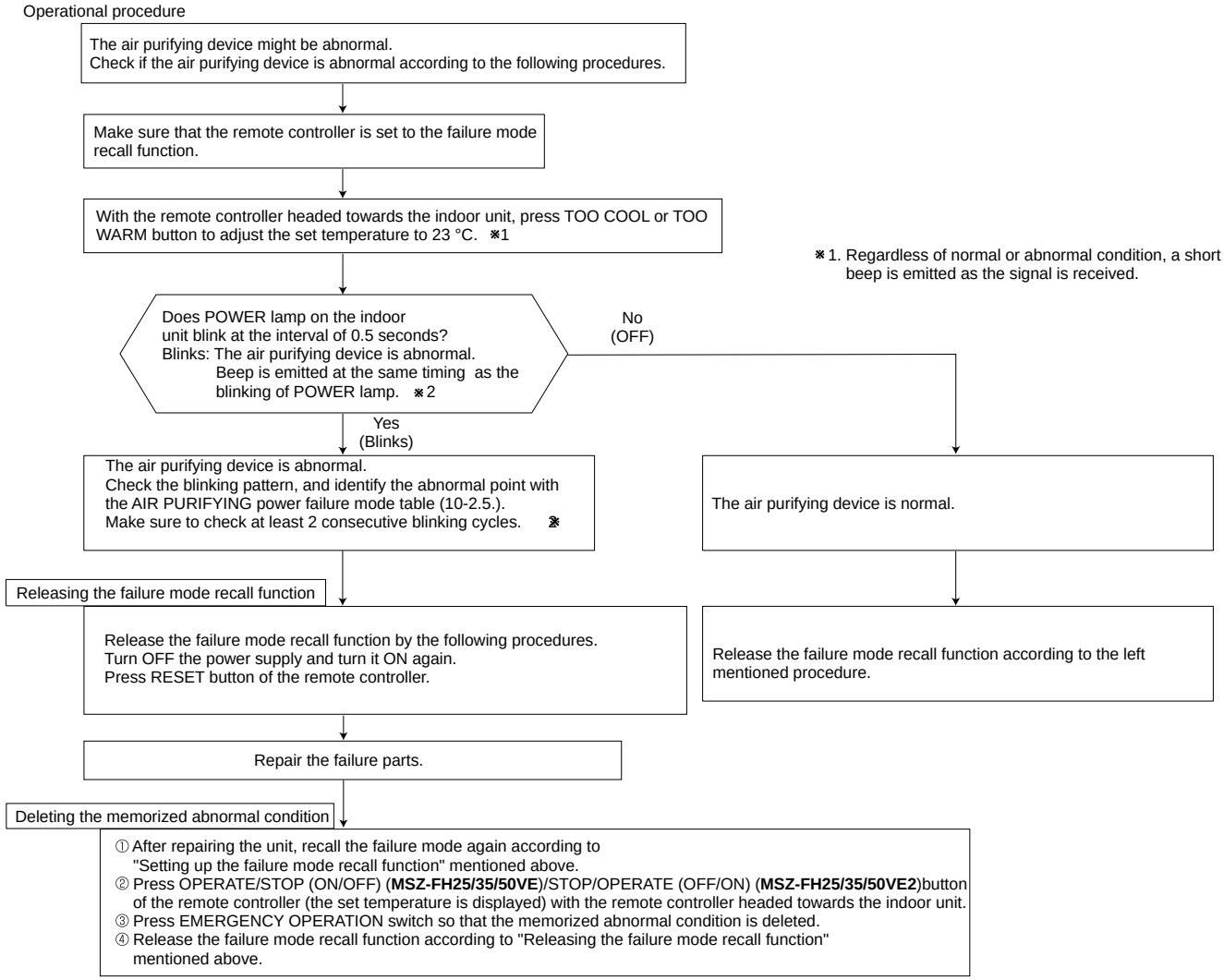


※3.Blinking pattern when the outdoor unit is abnormal:



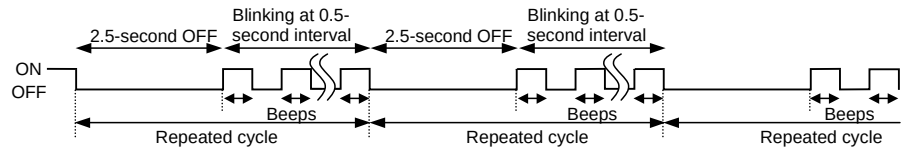
※4 The information regarding whether the connected outdoor unit is a low-standby-power model or a non-low-standby-power model will also be initialized. (Default= compatible with a low-standby-power model)

2. Flow chart of AIR PURIFYING power failure mode recall function


Operational procedure
The air purifying device might be abnormal.
Check if the air purifying device is abnormal according to the following procedures.
Make sure that the remote controller is set to the failure mode recall function.
With the remote controller headed towards the indoor unit, press TOO COOL or TOO WARM button to adjust the set temperature to 23 °C. ※1
※1. Regardless of normal or abnormal condition, a short beep is emitted as the signal is received.
Does POWER lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: The air purifying device is abnormal.
Beep is emitted at the same timing as the blinking of POWER lamp. ※2
No (OFF)
Yes (Blinks)
The air purifying device is abnormal.
Check the blinking pattern, and identify the abnormal point with the AIR PURIFYING power failure mode table (10-2.5.).
Make sure to check at least 2 consecutive blinking cycles. ※2
The air purifying device is normal.
Releasing the failure mode recall function
Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.
Release the failure mode recall function according to the left mentioned procedure.
Repair the failure parts.
Deleting the memorized abnormal condition
① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
② Press OPERATE/STOP (ON/OFF) (MSZ-FH25/35/50VE)/STOP/OPERATE (OFF/ON) (MSZ-FH25/35/50VE2)button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

Note1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2.Blinking pattern when the air purifying device is abnormal:



3. AIR PURIFYING power operation check

AIR PURIFYING power goes ON when PURIFIER button on the remote contoller is pressed with any set temperature displayed during failure mode recall function.
Check the operation display section of the remote controller to confirm that AIR PURIFYING power is activated.
While AIR PURIFYING lamp stays OFF, it means normal.
Flashing AIR PURIFYING lamp means abnormal, the AIR PURIFYING power is not conducted.

AIR PURIFYING lamp	Remedy
Continuously blinking	Follow "Check of AIR PURIFYING power" to identify the error. (Refer to 10-6.Ⓔ.)
2-time flash	AIR PURIFYING power control circuit on the indoor electronic control P.C. board is out of order. (Refer to 10-6.Ⓔ.)

NOTE: Perform the above mentioned check with the front panel closed. The interlock switch (Air purifying device) works by opening front panel and the AIR PURIFYING power is cut.

4. Indoor unit failure mode table

POWER lamp	Abnormal point (Failure mode)	Condition	Remedy
Not lighted	Normal	—	—
1-time flash every 0.5-second	Room temperature thermistor	The room temperature thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the room temperature thermistor (10-7.).
2-time flash 2.5-second OFF	Indoor coil thermistor	The indoor coil thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the main indoor coil thermistor, the sub indoor coil thermistor (10-7.).
3-time flash 2.5-second OFF	Serial signal	The serial signal from outdoor unit is not received for a maximum of 6 minutes.	Refer to 10-6.Ⓓ "How to check miswiring and serial signal error".
11-time flash 2.5-second OFF	Indoor fan motor	The rotational frequency feedback signal is not emitted for 12 seconds after the indoor fan motor is operated	Refer to 10-6.Ⓐ "Check of indoor fan motor".
12-time flash 2.5-second OFF	Indoor control system	It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	Replace the indoor electronic control P.C. board.

NOTE: Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (10-4.).

5. AIR PURIFYING power failure mode table

POWER lamp	Abnormal point (Failure mode)	Condition	Remedy
1-time flash	AIR PURIFYING power control	When AIR PURIFYING power cannot be turned OFF even if the AIR PURIFYING operation is turned OFF with the remote controller.	Refer to 10-6.Ⓔ "Check of AIR PURIFYING power".
2-time flash	Electrode (Spark discharge)	When the voltage between CN1T1 ③(+) and ②(GND) on the electronic P.C. board falls below 1.3V (spark discharge judgment voltage).	
3-time flash	Electrode (Abnormal electric discharge error 1)	When the voltage between CN1T1 ③(+) and ②(GND) on the electronic P.C. board falls by 1.2V below the normal voltage value (2.5V).	
4-time flash	Electrode (Abnormal electric discharge error 2)	When the voltage between CN1T1 ③(+) and ②(GND) on the electronic P.C. board falls significantly. (0.4V / 0.5ms)	
5-time flash	AIR PURIFYING power	When the voltage between CN1T1 ③(+) and ②(GND) on the electronic P.C. board rises above 3V.	

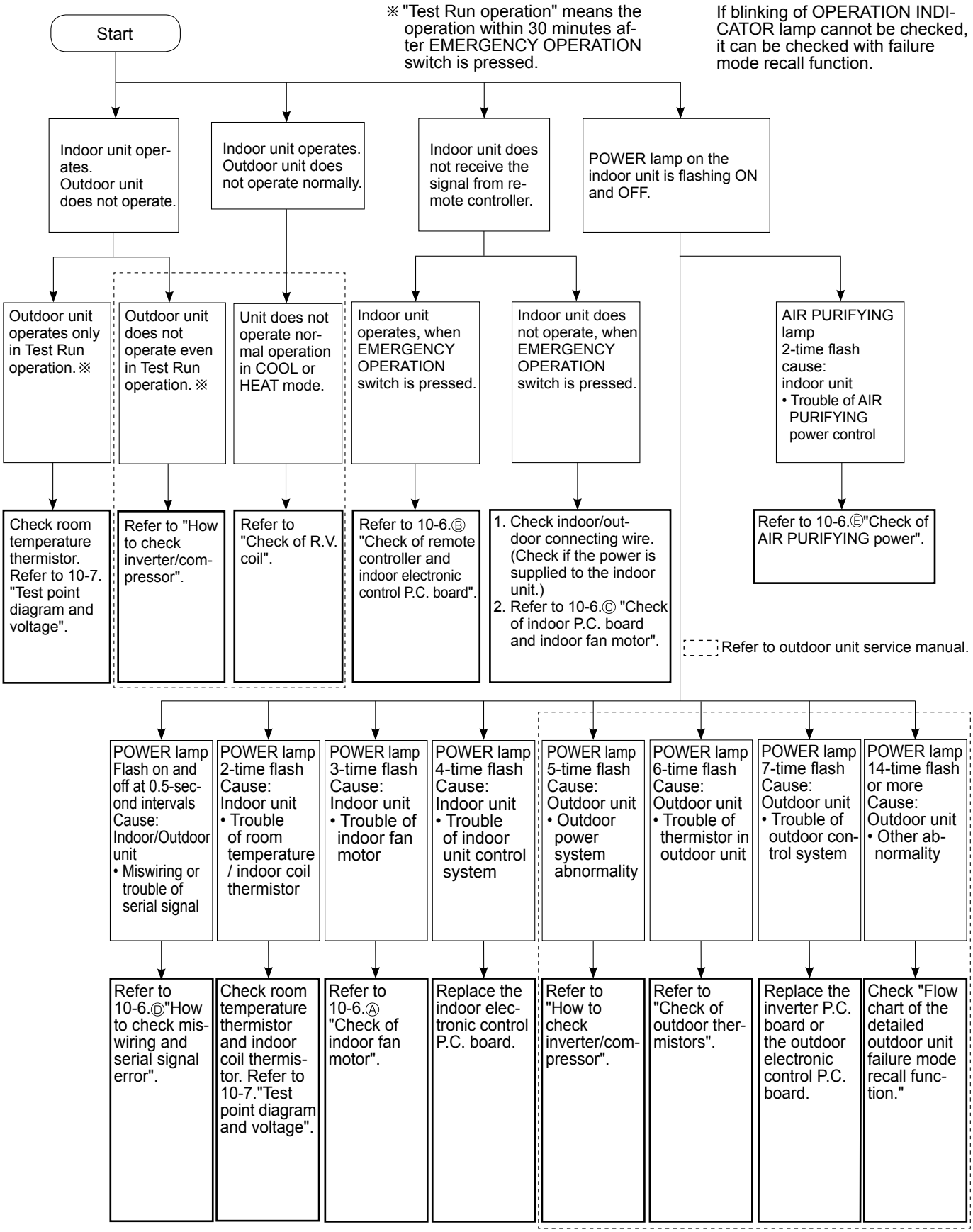
NOTE1 : Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (10-4.).
NOTE2 : As soon as an abnormality is detected, AIR PURIFYING power goes OFF, therefore measuring instrument which records the voltage wave is required in order to perform the above mentioned voltage measurement.

6. Operation check on i-see SENSOR

While recalling the failure details, set the temperature to 19°C to perform the simple check on the i-see SENSOR.
Place your hand over the i-see SENSOR, and the buzzer will beep at 1 second intervals. (Normal detection temperature range is 34 to 39°C.)
If the buzzer does not beep, check for disconnection of the connectors.
Set the temperature to 23°C to exit the simple check mode on the i-see SENSOR.

POWER lamp	Abnormal point (Failure mode)	Condition	Remedy
6-time flash	i-see SENSOR	Poor contact in i-see SENSOR wiring Failure in loading corrected data of i-see SENSOR	Check for disconnection of the connectors.

10-3. INSTRUCTION OF TROUBLESHOOTING


※ "Test Run operation" means the operation within 30 minutes after EMERGENCY OPERATION switch is pressed.
If blinking of OPERATION INDICATOR lamp cannot be checked, it can be checked with failure mode recall function.
Start
Indoor unit operates. Outdoor unit does not operate.
Indoor unit operates. Outdoor unit does not operate normally.
Indoor unit does not receive the signal from remote controller.
POWER lamp on the indoor unit is flashing ON and OFF.
Outdoor unit operates only in Test Run operation. ※
Outdoor unit does not operate even in Test Run operation. ※
Unit does not operate normal operation in COOL or HEAT mode.
Indoor unit operates, when EMERGENCY OPERATION switch is pressed.
Indoor unit does not operate, when EMERGENCY OPERATION switch is pressed.
AIR PURIFYING lamp 2-time flash cause: indoor unit • Trouble of AIR PURIFYING power control
Check room temperature thermistor. Refer to 10-7. "Test point diagram and voltage".
Refer to "How to check inverter/compressor".
Refer to "Check of R.V. coil".
Refer to 10-6.Ⓑ "Check of remote controller and indoor electronic control P.C. board".
1. Check indoor/outdoor connecting wire. (Check if the power is supplied to the indoor unit.)
2. Refer to 10-6.Ⓒ "Check of indoor P.C. board and indoor fan motor".
Refer to 10-6.Ⓔ"Check of AIR PURIFYING power".
Refer to outdoor unit service manual.
POWER lamp Flash on and off at 0.5-second intervals Cause: Indoor/Outdoor unit • Miswiring or trouble of serial signal
POWER lamp 2-time flash Cause: Indoor unit • Trouble of room temperature / indoor coil thermistor
POWER lamp 3-time flash Cause: Indoor unit • Trouble of indoor fan motor
POWER lamp 4-time flash Cause: Indoor unit • Trouble of indoor unit control system
POWER lamp 5-time flash Cause: Outdoor unit • Outdoor power system abnormality
POWER lamp 6-time flash Cause: Outdoor unit • Trouble of thermistor in outdoor unit
POWER lamp 7-time flash Cause: Outdoor unit • Trouble of outdoor control system
POWER lamp 14-time flash or more Cause: Outdoor unit • Other abnormality
Refer to 10-6.Ⓓ"How to check miswiring and serial signal error".
Check room temperature thermistor and indoor coil thermistor. Refer to 10-7."Test point diagram and voltage".
Refer to 10-6.Ⓐ "Check of indoor fan motor".
Replace the indoor electronic control P.C. board.
Refer to "How to check inverter/compressor".
Refer to "Check of outdoor thermistors".
Replace the inverter P.C. board or the outdoor electronic control P.C. board.
Check "Flow chart of the detailed outdoor unit failure mode recall function."

10-4. TROUBLESHOOTING CHECK TABLE

Before taking measures, make sure that the symptom reappears for accurate troubleshooting.
When the indoor unit has started operation and detected an abnormality of the following condition (the first detection after the power ON), the indoor fan motor turns OFF and OPERATION INDICATOR lamp flashes.

• The following indicator applies regardless of shape of the indication.

OPERATION INDICATOR

☼ (POWER) ○ (AIR PURIFYING)

✹ Lighted
☼ Blinking
○ Not lighted

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Remedy
1	Miswiring or serial signal	POWER lamp flashes. 0.5-second ON ✹○✹○✹○○ 0.5-second OFF	Indoor unit and outdoor unit do not operate.	The serial signal from the outdoor unit is not received for 6 minutes. The indoor unit is connected to a low-standby-power model after once connected to a non-low-standby-power model.	• Refer to 10-6. Ⓓ "How to check miswiring and serial signal error". • Refer to **NOTE**.
2	Indoor coil thermistor Room temperature thermistor	POWER lamp flashes. 2-time flash ✹○✹○○○○○✹○✹○○ 2.5-second OFF		The indoor coil or the room temperature thermistor is short or open circuit.	• Refer to the characteristics of indoor coil thermistor, and the room temperature thermistor (10-7.).
3	Indoor fan motor	POWER lamp flashes. 3-time flash ✹○✹○✹○○○○○✹○✹○✹○○○ 2.5-second OFF		The rotational frequency feedback signal is not emitted during the indoor fan operation.	• Refer to 10-6. Ⓐ "Check of indoor fan motor".
4	Indoor control system	POWER lamp flashes. 4-time flash ✹○✹○✹○✹○○○○○✹○✹○✹○✹ 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	• Replace the indoor electronic control P.C. board.
5	Outdoor power system	POWER lamp flashes. 5-time flash ✹○✹○✹○✹○✹○○○○○✹○✹○ 2.5-second OFF		It consecutively occurs 3 times that the compressor stops for overcurrent protection or start-up failure protection within 1 minute after start-up.	• Refer to "How to check of inverter/compressor". Refer to outdoor unit service manual • Check the stop valve.
6	Outdoor thermistors	POWER lamp flashes. 6-time flash ✹○✹○✹○✹○✹○✹○○○○○✹○ 2.5-second OFF		The outdoor thermistors short or open circuit during the compressor operation.	• Refer to "Check of outdoor thermistor". Refer to outdoor unit service manual.
7	Outdoor control system	POWER lamp flashes. 7-time flash ✹○✹○✹○✹○✹○✹○✹○○○○○✹ 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Replace the inverter P.C. board or the outdoor electronic control P.C. board. Refer to outdoor unit service manual.
8	Other abnormality	POWER lamp flashes. 14-time flash or more ✹○✹○✹○✹○✹○✹○✹○✹○✹○✹○✹ ○✹○✹○✹○○○○○✹ 2.5-second OFF		An abnormality other than above mentioned is detected.	• Check the stop valve. • Check the 4-way valve. • Check the abnormality in detail using the failure mode recall function for outdoor unit.
9	Outdoor control system	POWER lamp lights up. ✹	Outdoor unit does not operate	It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Check the blinking pattern of the LED on the inverter P.C. board or the outdoor electronic control P.C. board.

NOTE: The indoor unit may have been connected to a non-low-standby-power model outdoor unit. To use a low-standby-power model, clear the error history by referring to “Deleting the memorized abnormal condition” described in 10-2.1. When the error history is being cleared, the connection information also will be initialized. The indoor unit will be compatible with a low-standby-power model after initialization. If the operation indicator lamp continues to flash as shown in No.1 after the procedure, refer to 10-6. Ⓓ “How to check miswiring and serial error”.

OPERATION INDICATOR

(POWER) (AIR PURIFYING)

Lighted
Blinking
Not lighted

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Remedy
1	**MXZ type** Operation mode setting	• AIR PURIFYING lamp flash. 2.5-second OFF • POWER lamp is lighted.	Outdoor unit operates but indoor unit does not operate.	The operation mode of the each indoor unit is differently set to COOL (includes DRY, FAN) and HEAT at the same time, the operation mode of the indoor unit that has operated at first has the priority.	• Unify the operation mode. Refer to outdoor unit service manual.

OPERATION INDICATOR

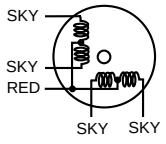
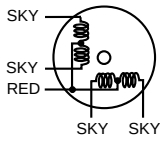
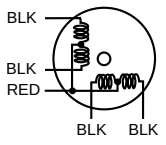
(POWER) (AIR PURIFYING)

Lighted
Blinking
Not lighted

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Remedy
1	AIR PURIFYING power control	AIR PURIFYING lamp flashes. 2.5-second OFF	Indoor unit and outdoor unit do not operate.	When AIR PURIFYING power cannot be turned OFF even if the AIR PURIFYING operation is turned OFF by remote controller.	• Refer to 10-6.Ⓔ"Check of AIR PURIFYING power".

10-5. TROUBLE CRITERION OF MAIN PARTS

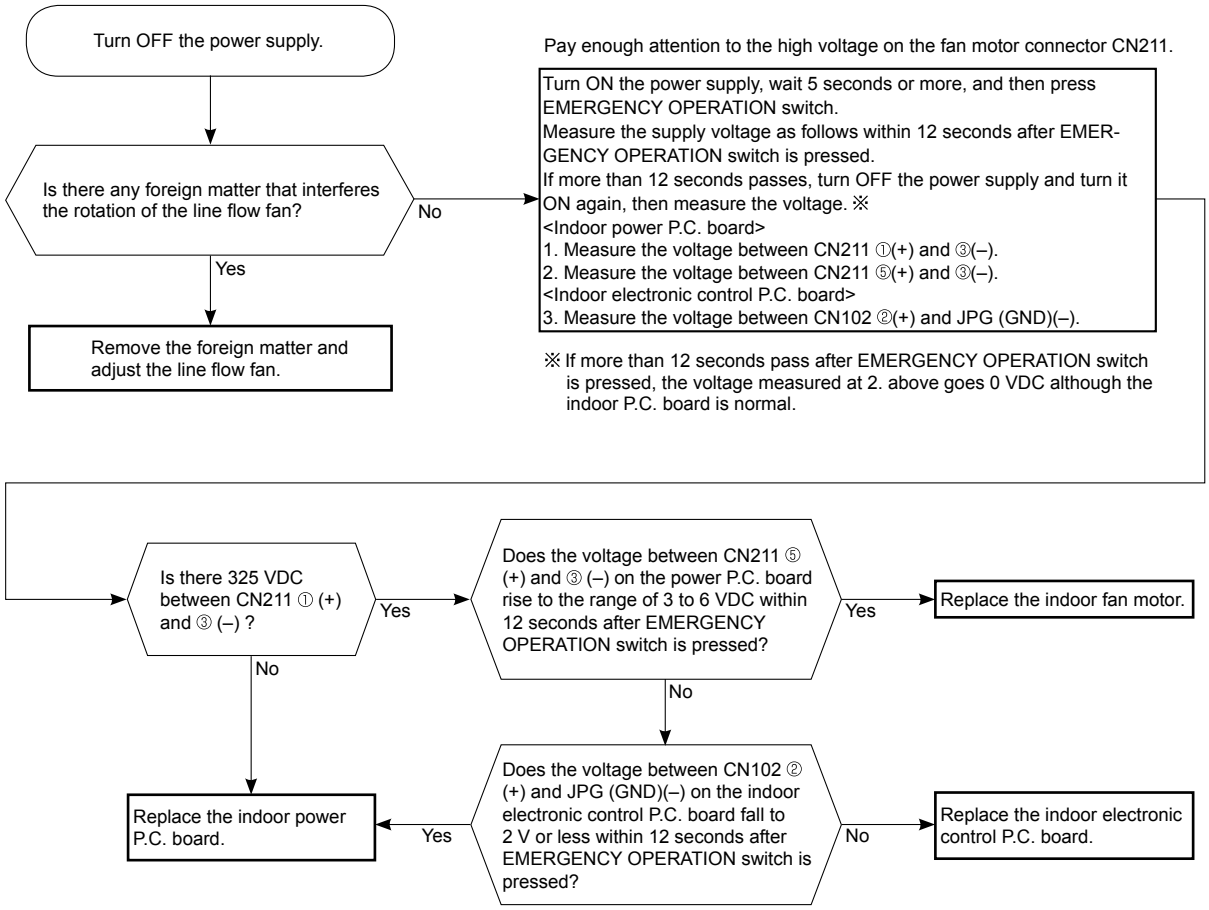
MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

Part name	Check method and criterion	Figure
Room temperature thermistor (RT11) Indoor coil thermistor (RT12, RT13)	Measure the resistance with a tester. Refer to 10-7. "Test point diagram and voltage", "Indoor electronic control P.C. board", for the chart of thermistor.	
Indoor fan motor (MF)	Check 10-6.Ⓐ "Check of indoor fan motor".	
Vane motor (MV1) (HORIZONTAL)	Measure the resistance between the terminals with a tester. (Temperature: 10 - 30°C) Color of the lead wire: Normal RED - SKY: 262 - 328 Ω	
Vane motor (MV2) (VERTICAL)	Measure the resistance between the terminals with a tester. (Temperature: 10 - 30°C) Color of the lead wire: Normal RED - SKY: 219 - 273 Ω	
i-see SENSOR MOTOR (MT)	Measure the resistance between the terminals with a tester. (Temperature: 10 - 30°C) Color of the lead wire: Normal RED - BLK: 262 - 328 Ω	
AIR PURIFYING power	Check 10-6.Ⓔ.	

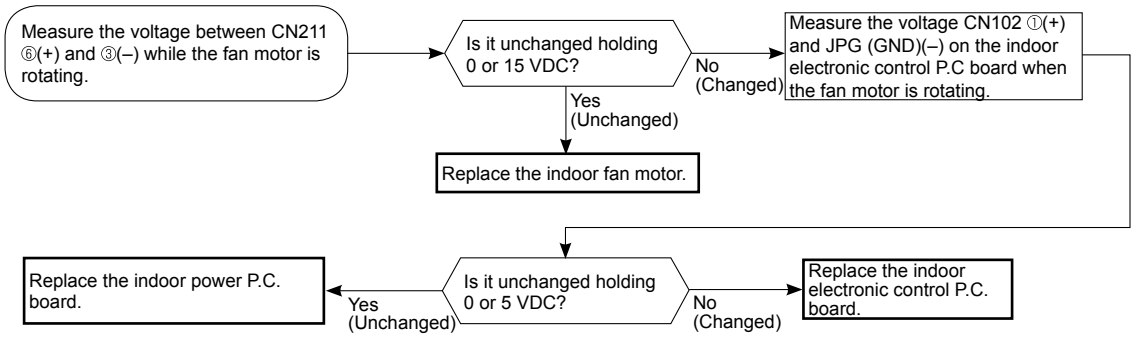
10-6. TROUBLESHOOTING FLOW

Ⓐ Check of indoor fan motor

The indoor fan motor error has occurred, and the indoor fan does not operate.

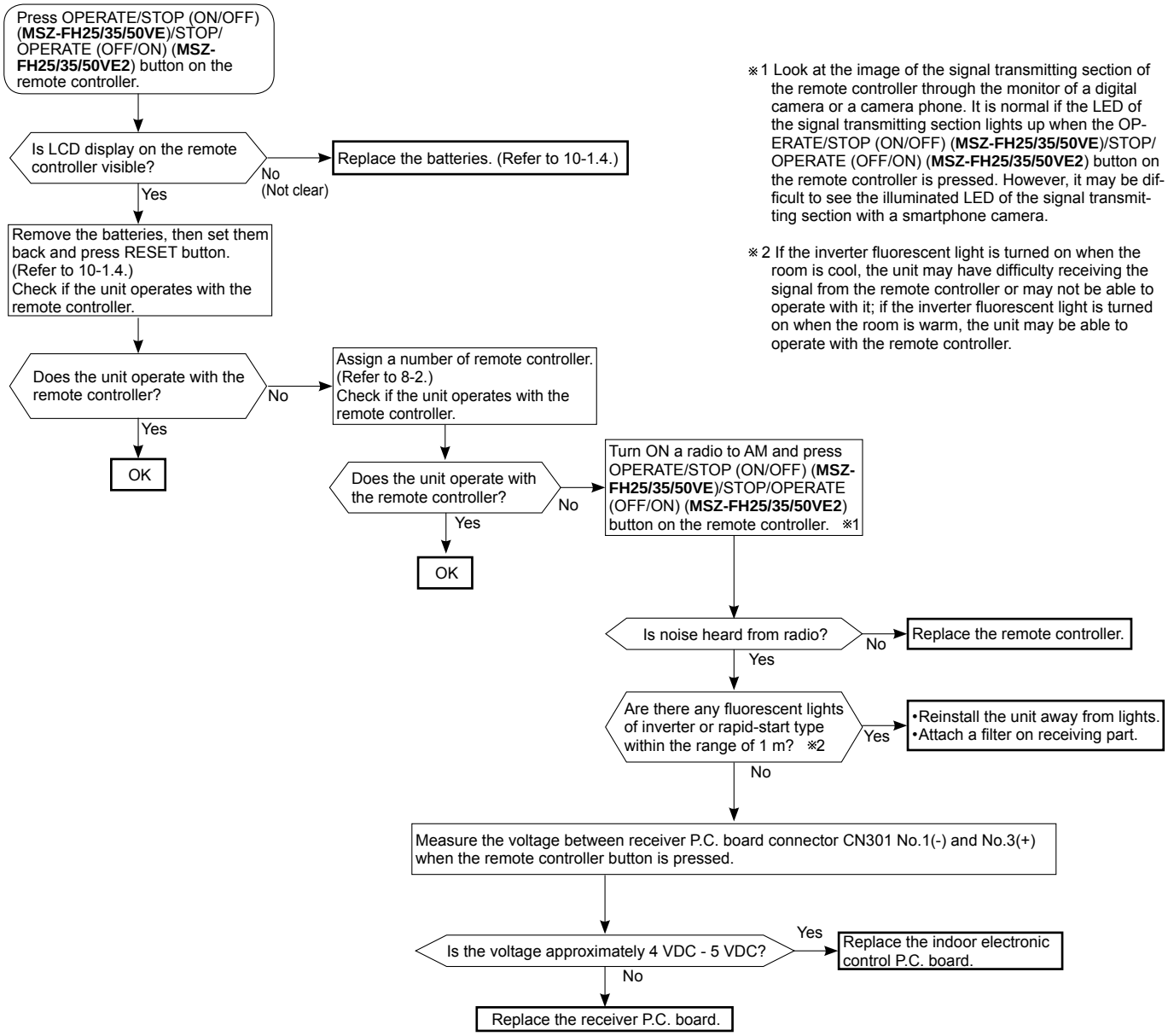

Turn OFF the power supply.
Is there any foreign matter that interferes the rotation of the line flow fan?
No
Yes
Remove the foreign matter and adjust the line flow fan.
Pay enough attention to the high voltage on the fan motor connector CN211.
Turn ON the power supply, wait 5 seconds or more, and then press EMERGENCY OPERATION switch.
Measure the supply voltage as follows within 12 seconds after EMERGENCY OPERATION switch is pressed.
If more than 12 seconds passes, turn OFF the power supply and turn it ON again, then measure the voltage. ※
<Indoor power P.C. board>
1. Measure the voltage between CN211 ①(+) and ③(–).
2. Measure the voltage between CN211 ⑤(+) and ③(–).
<Indoor electronic control P.C. board>
3. Measure the voltage between CN102 ②(+) and JPG (GND)(–).
※ If more than 12 seconds pass after EMERGENCY OPERATION switch is pressed, the voltage measured at 2. above goes 0 VDC although the indoor P.C. board is normal.
Is there 325 VDC between CN211 ① (+) and ③ (–) ?
Yes
No
Does the voltage between CN211 ⑤ (+) and ③ (–) on the power P.C. board rise to the range of 3 to 6 VDC within 12 seconds after EMERGENCY OPERATION switch is pressed?
Yes
Replace the indoor fan motor.
No
Does the voltage between CN102 ② (+) and JPG (GND)(–) on the indoor electronic control P.C. board fall to 2 V or less within 12 seconds after EMERGENCY OPERATION switch is pressed?
Yes
Replace the indoor power P.C. board.
No
Replace the indoor electronic control P.C. board.

The indoor fan motor error has occurred, and the indoor fan repeats "12-second ON and 30-second OFF" 3 times, and then stops.


Measure the voltage between CN211 ⑥(+) and ③(–) while the fan motor is rotating.
Is it unchanged holding 0 or 15 VDC?
No (Changed)
Measure the voltage CN102 ①(+) and JPG (GND)(–) on the indoor electronic control P.C board when the fan motor is rotating.
Yes (Unchanged)
Replace the indoor fan motor.
Replace the indoor power P.C. board.
Yes (Unchanged)
Is it unchanged holding 0 or 5 VDC?
No (Changed)
Replace the indoor electronic control P.C. board.

Ⓑ Check of remote controller and indoor electronic control P.C. board

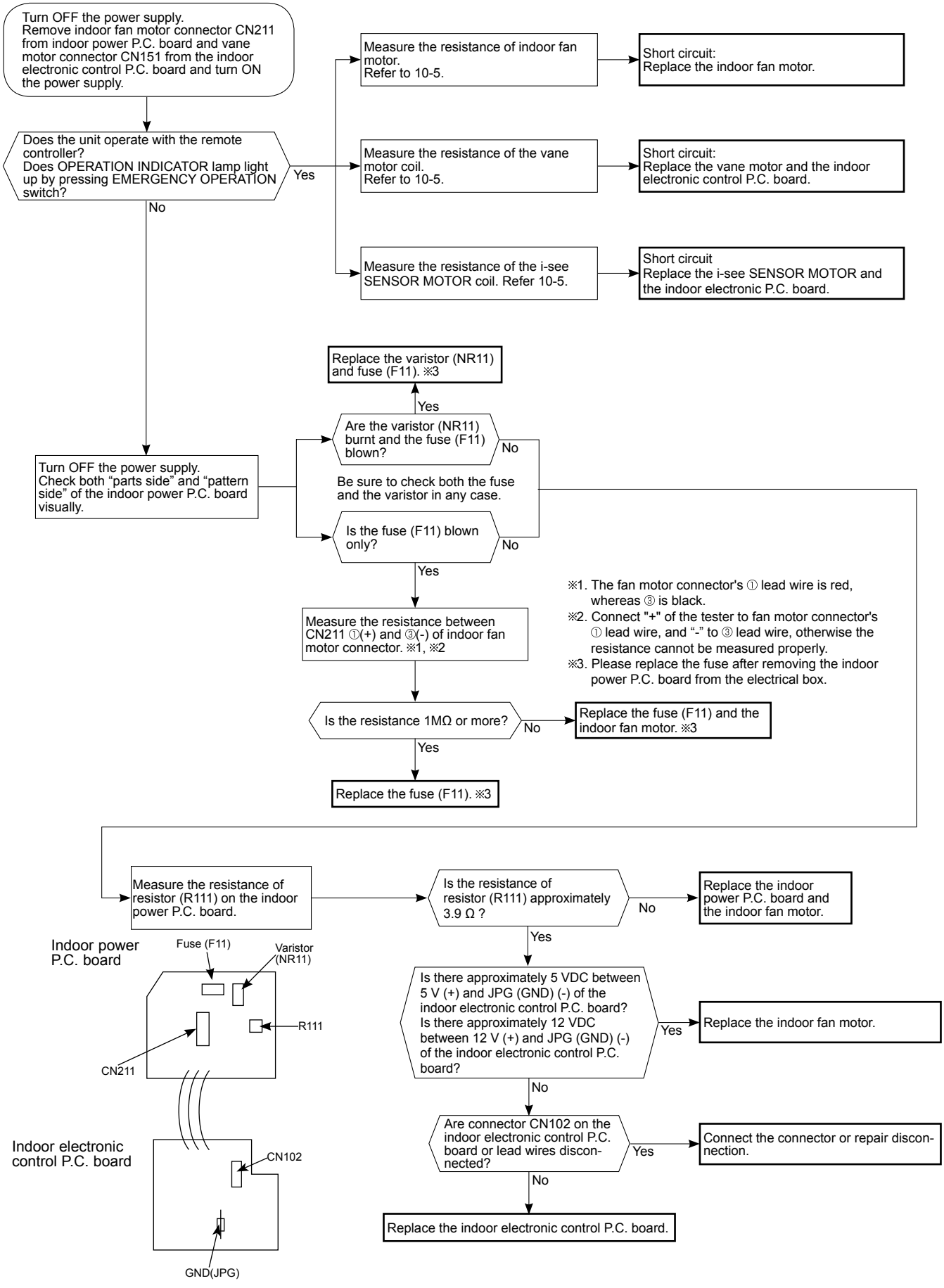
※Check if the remote controller is exclusive for this air conditioner.


Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/ OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller.
Is LCD display on the remote controller visible?
No (Not clear)
Replace the batteries. (Refer to 10-1.4.)
Yes
Remove the batteries, then set them back and press RESET button. (Refer to 10-1.4.) Check if the unit operates with the remote controller.
Does the unit operate with the remote controller?
No
Assign a number of remote controller. (Refer to 8-2.) Check if the unit operates with the remote controller.
Yes
OK
Does the unit operate with the remote controller?
No
Turn ON a radio to AM and press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller. ※1
Yes
OK
Is noise heard from radio?
No
Replace the remote controller.
Yes
Are there any fluorescent lights of inverter or rapid-start type within the range of 1 m? ※2
Yes
•Reinstall the unit away from lights.
•Attach a filter on receiving part.
No
Measure the voltage between receiver P.C. board connector CN301 No.1(-) and No.3(+) when the remote controller button is pressed.
Is the voltage approximately 4 VDC - 5 VDC?
Yes
Replace the indoor electronic control P.C. board.
No
Replace the receiver P.C. board.

※1 Look at the image of the signal transmitting section of the remote controller through the monitor of a digital camera or a camera phone. It is normal if the LED of the signal transmitting section lights up when the OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/ OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller is pressed. However, it may be difficult to see the illuminated LED of the signal transmitting section with a smartphone camera.

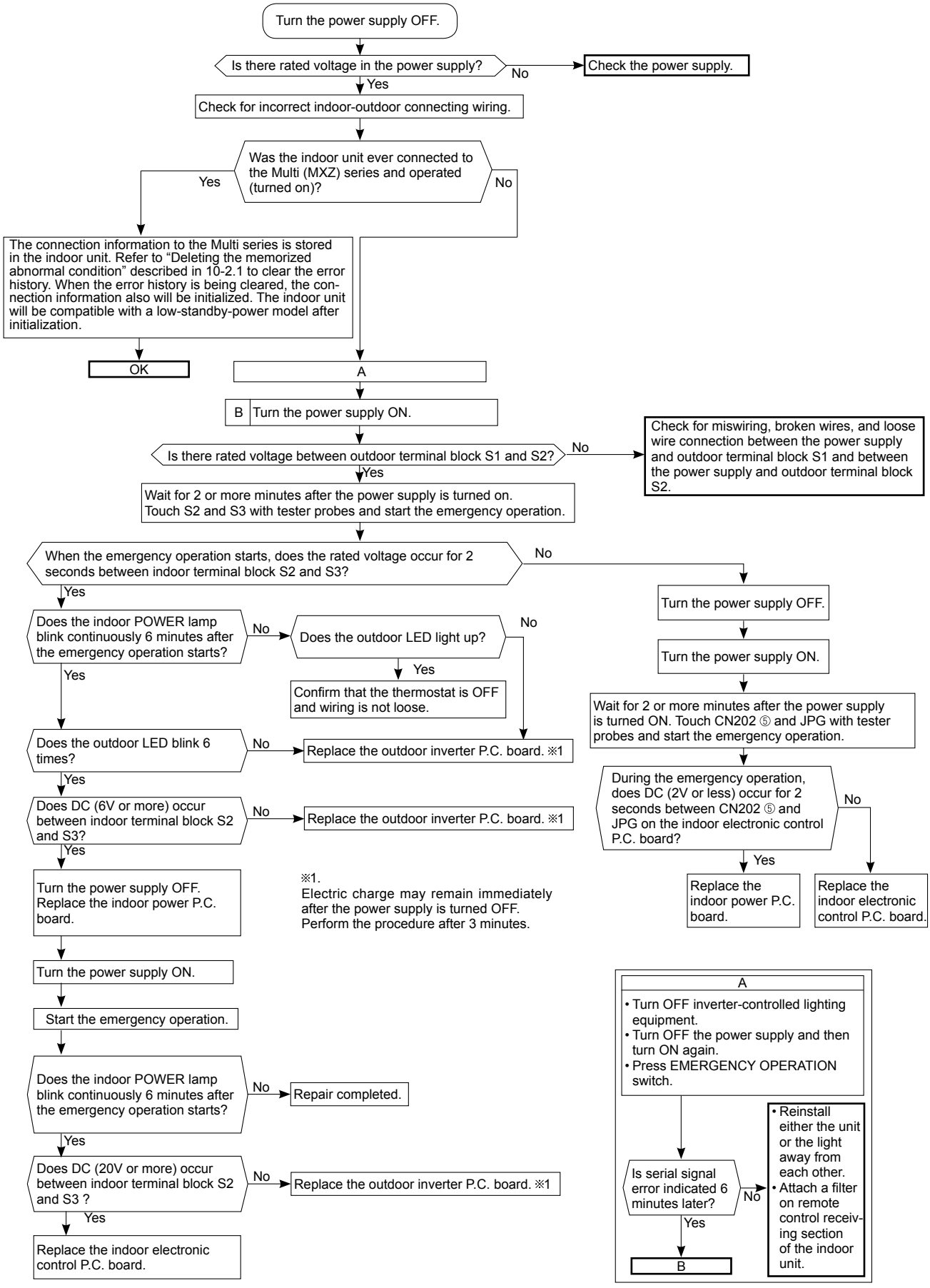
※2 If the inverter fluorescent light is turned on when the room is cool, the unit may have difficulty receiving the signal from the remote controller or may not be able to operate with it; if the inverter fluorescent light is turned on when the room is warm, the unit may be able to operate with the remote controller.

Ⓒ Check of indoor P.C. board and indoor fan motor

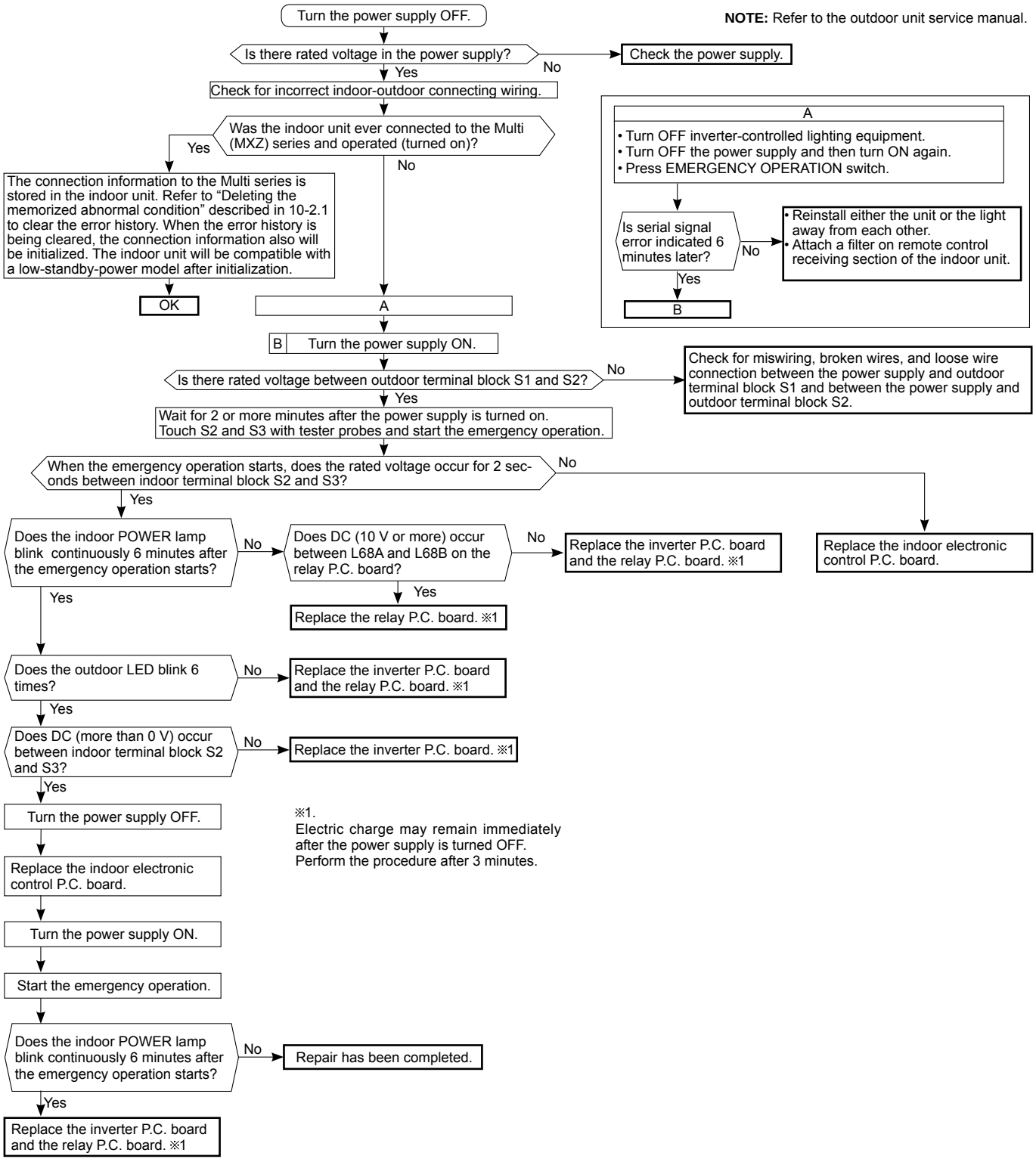

Turn OFF the power supply.
Remove indoor fan motor connector CN211 from indoor power P.C. board and vane motor connector CN151 from the indoor electronic control P.C. board and turn ON the power supply.
Does the unit operate with the remote controller?
Does OPERATION INDICATOR lamp light up by pressing EMERGENCY OPERATION switch?
Yes
No
Measure the resistance of indoor fan motor.
Refer to 10-5.
Short circuit:
Replace the indoor fan motor.
Measure the resistance of the vane motor coil.
Refer to 10-5.
Short circuit:
Replace the vane motor and the indoor electronic control P.C. board.
Measure the resistance of the i-see SENSOR MOTOR coil. Refer 10-5.
Short circuit
Replace the i-see SENSOR MOTOR and the indoor electronic P.C. board.
Turn OFF the power supply.
Check both “parts side” and “pattern side” of the indoor power P.C. board visually.
Are the varistor (NR11) burnt and the fuse (F11) blown?
Yes
No
Replace the varistor (NR11) and fuse (F11). ※3
Be sure to check both the fuse and the varistor in any case.
Is the fuse (F11) blown only?
Yes
No
Measure the resistance between CN211 ①(+) and ③(-) of indoor fan motor connector. ※1, ※2
Is the resistance 1MΩ or more?
Yes
No
Replace the fuse (F11) and the indoor fan motor. ※3
Replace the fuse (F11). ※3
※1. The fan motor connector's ① lead wire is red, whereas ③ is black.
※2. Connect "+" of the tester to fan motor connector's ① lead wire, and “-” to ③ lead wire, otherwise the resistance cannot be measured properly.
※3. Please replace the fuse after removing the indoor power P.C. board from the electrical box.
Measure the resistance of resistor (R111) on the indoor power P.C. board.
Is the resistance of resistor (R111) approximately 3.9 Ω ?
No
Yes
Replace the indoor power P.C. board and the indoor fan motor.
Indoor power P.C. board
Fuse (F11)
Varistor (NR11)
R111
CN211
Indoor electronic control P.C. board
CN102
GND(JPG)
Is there approximately 5 VDC between 5 V (+) and JPG (GND) (-) of the indoor electronic control P.C. board?
Is there approximately 12 VDC between 12 V (+) and JPG (GND) (-) of the indoor electronic control P.C. board?
Yes
No
Replace the indoor fan motor.
Are connector CN102 on the indoor electronic control P.C. board or lead wires disconnected?
Yes
No
Connect the connector or repair disconnection.
Replace the indoor electronic control P.C. board.

Ⓓ How to check miswiring and serial signal error

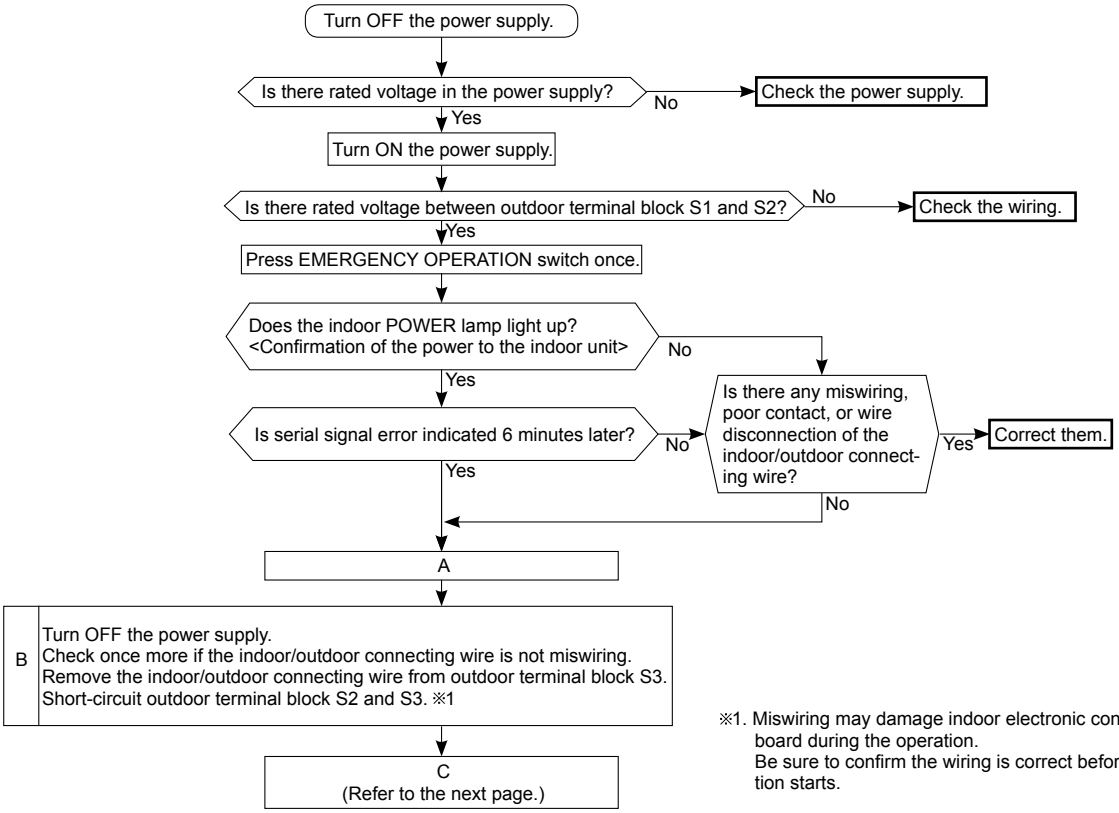
MUZ-25/35


Turn the power supply OFF.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Check for incorrect indoor-outdoor connecting wiring.
Was the indoor unit ever connected to the Multi (MXZ) series and operated (turned on)?
Yes
No
The connection information to the Multi series is stored in the indoor unit. Refer to "Deleting the memorized abnormal condition" described in 10-2.1 to clear the error history. When the error history is being cleared, the connection information also will be initialized. The indoor unit will be compatible with a low-standby-power model after initialization.
OK
A
B
Turn the power supply ON.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check for miswiring, broken wires, and loose wire connection between the power supply and outdoor terminal block S1 and between the power supply and outdoor terminal block S2.
Yes
Wait for 2 or more minutes after the power supply is turned on.
Touch S2 and S3 with tester probes and start the emergency operation.
When the emergency operation starts, does the rated voltage occur for 2 seconds between indoor terminal block S2 and S3?
No
Yes
Turn the power supply OFF.
Turn the power supply ON.
Wait for 2 or more minutes after the power supply is turned ON. Touch CN202 ⑤ and JPG with tester probes and start the emergency operation.
During the emergency operation, does DC (2V or less) occur for 2 seconds between CN202 ⑤ and JPG on the indoor electronic control P.C. board?
No
Yes
Replace the indoor power P.C. board.
Replace the indoor electronic control P.C. board.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Does the outdoor LED light up?
No
Yes
Confirm that the thermostat is OFF and wiring is not loose.
Yes
Does the outdoor LED blink 6 times?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Does DC (6V or more) occur between indoor terminal block S2 and S3?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Turn the power supply OFF. Replace the indoor power P.C. board.
※1.
Electric charge may remain immediately after the power supply is turned OFF.
Perform the procedure after 3 minutes.
Turn the power supply ON.
Start the emergency operation.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Repair completed.
Yes
Does DC (20V or more) occur between indoor terminal block S2 and S3 ?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Replace the indoor electronic control P.C. board.
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B

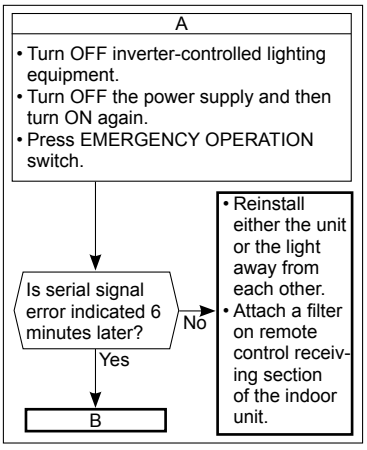
MUZ-FH50


Turn the power supply OFF.
NOTE: Refer to the outdoor unit service manual.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Check for incorrect indoor-outdoor connecting wiring.
Was the indoor unit ever connected to the Multi (MXZ) series and operated (turned on)?
Yes
No
The connection information to the Multi series is stored in the indoor unit. Refer to "Deleting the memorized abnormal condition" described in 10-2.1 to clear the error history. When the error history is being cleared, the connection information also will be initialized. The indoor unit will be compatible with a low-standby-power model after initialization.
OK
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B
B
Turn the power supply ON.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check for miswiring, broken wires, and loose wire connection between the power supply and outdoor terminal block S1 and between the power supply and outdoor terminal block S2.
Yes
Wait for 2 or more minutes after the power supply is turned on.
Touch S2 and S3 with tester probes and start the emergency operation.
When the emergency operation starts, does the rated voltage occur for 2 seconds between indoor terminal block S2 and S3?
No
Yes
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Does DC (10 V or more) occur between L68A and L68B on the relay P.C. board?
No
Replace the inverter P.C. board and the relay P.C. board. ※1
Replace the indoor electronic control P.C. board.
Yes
Replace the relay P.C. board. ※1
Yes
Does the outdoor LED blink 6 times?
No
Replace the inverter P.C. board and the relay P.C. board. ※1
Yes
Does DC (more than 0 V) occur between indoor terminal block S2 and S3?
No
Replace the inverter P.C. board. ※1
Yes
Turn the power supply OFF.
※1.
Electric charge may remain immediately after the power supply is turned OFF.
Perform the procedure after 3 minutes.
Replace the indoor electronic control P.C. board.
Turn the power supply ON.
Start the emergency operation.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Repair has been completed.
Yes
Replace the inverter P.C. board and the relay P.C. board. ※1

MXZ Type


Turn OFF the power supply.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Turn ON the power supply.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check the wiring.
Yes
Press EMERGENCY OPERATION switch once.
Does the indoor POWER lamp light up?
<Confirmation of the power to the indoor unit>
No
Yes
Is serial signal error indicated 6 minutes later?
No
Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
Yes
Correct them.
Yes
No
A
B
Turn OFF the power supply.
Check once more if the indoor/outdoor connecting wire is not miswiring.
Remove the indoor/outdoor connecting wire from outdoor terminal block S3.
Short-circuit outdoor terminal block S2 and S3. ※1
C
(Refer to the next page.)

※1. Miswiring may damage indoor electronic control P.C. board during the operation.
Be sure to confirm the wiring is correct before the operation starts.

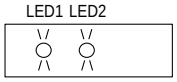

A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B

LED indication for communication status

Communication status is indicated by the LED.

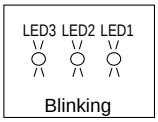
Unit status
- Blinking: Normal communication
- Lighted: Abnormal communication or not connected
- Not lighted: The outdoor P.C. board is abnormal.
- NOTE: "Lighted" and "Not lighted" in the table below does not indicate abnormal.

MXZ-2D33/2D40/2D53VA/2D53VAH
Outdoor display P.C. board



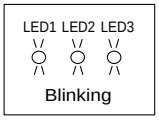
LED 1	LED 2
Unit A status	Unit B status

MXZ-3D54/3D68/4D72VA
Outdoor control P.C. board

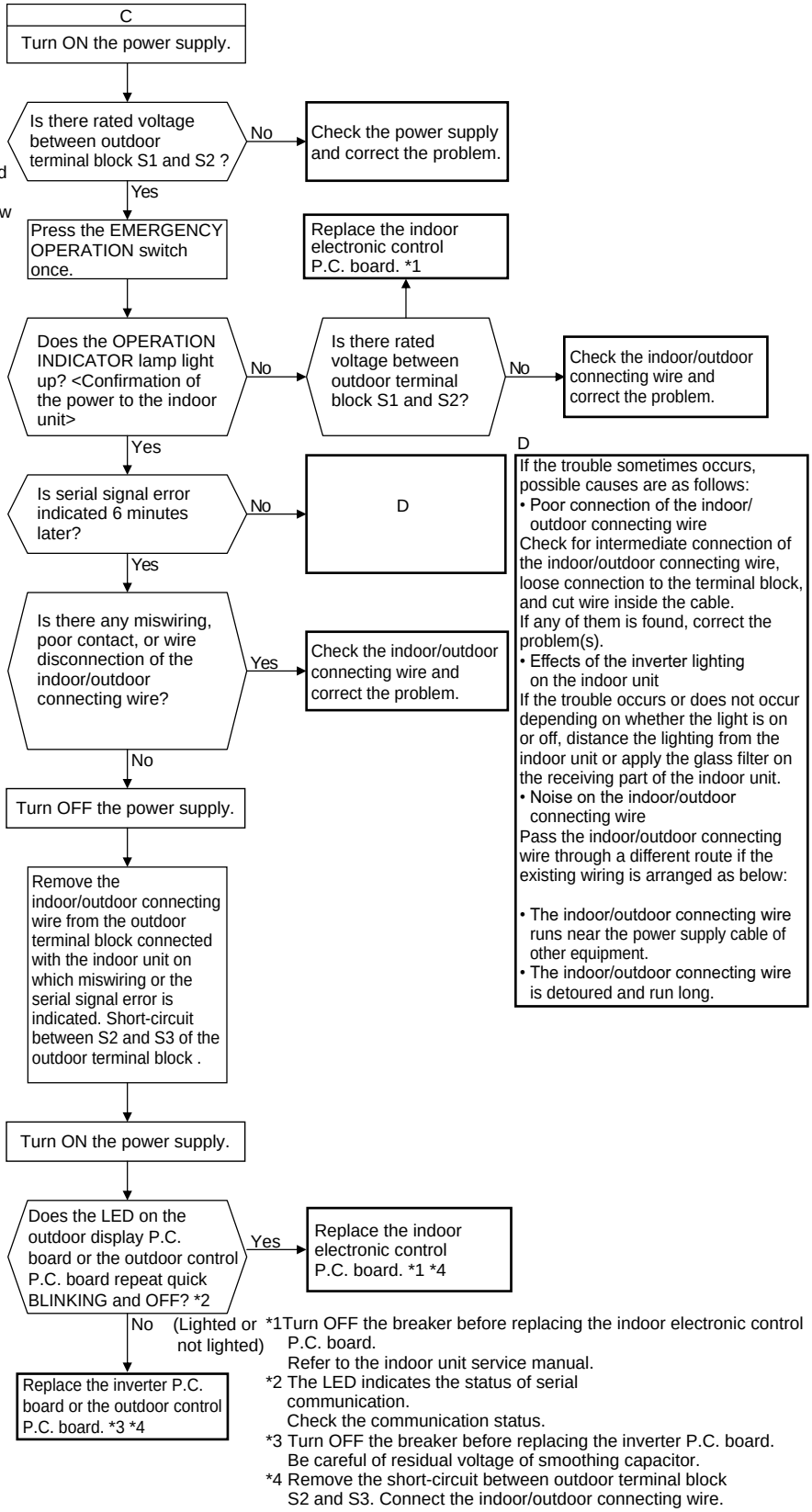


Pattern	LED 3	LED 2	LED 1
1	Lighted	Unit B status	Unit A status
2	Not lighted	Unit D status	Unit C status

MXZ-4D83/5D102VA
Outdoor control P.C. board



Pattern	LED 1	LED 2	LED 3
1	Unit A status	Unit B status	Unit C status
2	Unit D status	Unit E status	Not lighted


C
Turn ON the power supply.
Is there rated voltage between outdoor terminal block S1 and S2 ?
No
Check the power supply and correct the problem.
Yes
Press the EMERGENCY OPERATION switch once.
Replace the indoor electronic control P.C. board. *1
Does the OPERATION INDICATOR lamp light up? <Confirmation of the power to the indoor unit>
No
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check the indoor/outdoor connecting wire and correct the problem.
Yes
D
Is serial signal error indicated 6 minutes later?
No
D
Yes
Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
Yes
Check the indoor/outdoor connecting wire and correct the problem.
No
Turn OFF the power supply.
Remove the indoor/outdoor connecting wire from the outdoor terminal block connected with the indoor unit on which miswiring or the serial signal error is indicated. Short-circuit between S2 and S3 of the outdoor terminal block .
Turn ON the power supply.
Does the LED on the outdoor display P.C. board or the outdoor control P.C. board repeat quick BLINKING and OFF? *2
Yes
Replace the indoor electronic control P.C. board. *1 *4
No (Lighted or not lighted)
Replace the inverter P.C. board or the outdoor control P.C. board. *3 *4
If the trouble sometimes occurs, possible causes are as follows:
• Poor connection of the indoor/outdoor connecting wire
Check for intermediate connection of the indoor/outdoor connecting wire, loose connection to the terminal block, and cut wire inside the cable.
If any of them is found, correct the problem(s).
• Effects of the inverter lighting on the indoor unit
If the trouble occurs or does not occur depending on whether the light is on or off, distance the lighting from the indoor unit or apply the glass filter on the receiving part of the indoor unit.
• Noise on the indoor/outdoor connecting wire
Pass the indoor/outdoor connecting wire through a different route if the existing wiring is arranged as below:
• The indoor/outdoor connecting wire runs near the power supply cable of other equipment.
• The indoor/outdoor connecting wire is detoured and run long.

*1 Turn OFF the breaker before replacing the indoor electronic control P.C. board.
Refer to the indoor unit service manual.
*2 The LED indicates the status of serial communication.
Check the communication status.
*3 Turn OFF the breaker before replacing the inverter P.C. board.
Be careful of residual voltage of smoothing capacitor.
*4 Remove the short-circuit between outdoor terminal block S2 and S3. Connect the indoor/outdoor connecting wire.

When AIR PURIFYING lamp flashes 2-time.
When POWER lamp flashes 1 to 5 times while AIR PURIFYING power failure mode is recalled.

Ⓔ Check of AIR PURIFYING power

After performing the check, make sure to release the failure mode recall function.

High voltage (approximately 5.8kV) is generated during AIR PURIFYING power operation.
Pay careful attention and never touch the air purifying device and the high-voltage lead part.

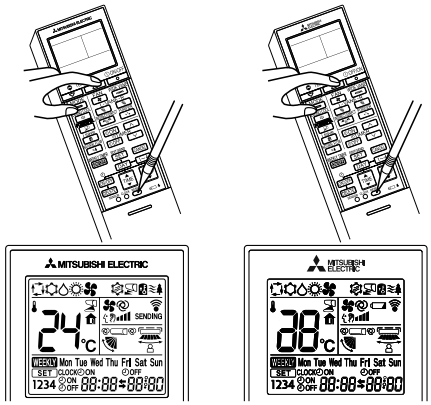
Turn ON the power supply.

Does AIR PURIFYING lamp flash 2-time with unit stopping?

Yes → Replace the indoor electronic control P.C. board.

No

MSZ-FH25VE / MSZ-FH35VE / MSZ-FH50VE | **MSZ-FH25VE2 / MSZ-FH35VE2 / MSZ-FH50VE2**



Make sure that the front panel is firmly closed.

① While pressing both OPERATION SELECT button and TEMP ⊕ button on the remote controller at the same time, press RESET button.
② First, release RESET button.
Hold down the other two buttons for another 3 seconds.
Make sure that the indicators on the LCD screen shown in the right figure are all displayed. Then release the buttons.
③ Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/ STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button. (the set temperature is displayed)
④ And press PURIFIER button once with the remote controller headed towards the indoor unit. ※1
AIR PURIFYING operation is selected.
※ The AIR PURIFYING power operation check mode is set. (Refer to 10-2.5.)

AIR PURIFYING operation

※1 Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

Does AIR PURIFYING lamp stay OFF, or continuously blink?

OFF → AIR PURIFYING power supply is normal.
Working of the interlock switch (Air purifying device) due to uncomplete close of the front panel could cause 2-time flash.

※2 Turn AIR PURIFYING power OFF and ON again.
(For turning OFF AIR PURIFYING power, refer to 10-2.3.)
(If it goes normal without turning OFF and ON, AIR PURIFYING lamp does not go OFF.)

Continuously blinking.

Remove the air purifying device, firmly close the front panel, and then perform AIR PURIFYING power operation check (※2). Does AIR PURIFYING lamp stay OFF, or continuously blink?

OFF → Abnormal discharge may occur due to much dirt on the air purifying device, clean it.
After cleaning, make sure to attach the air purifying device since it is completely dry.
If AIR PURIFYING power operation check is performed with the air purifying device wet, protection gets active and AIR PURIFYING lamp blinks continuously as well.

Continuously blinking.

Turn OFF the power supply, and check the interlock switch (Air purifying device). Is it firmly fixed?

No → Firmly fix the interlock switch (Air purifying device).

Yes

Work and Not-work the interlock switch (Air purifying device) using something like a screw driver, and measure the resistance between CN1R1① and ②on the indoor electronic control P.C. board. Does the interlock switch (Air purifying device) function?

No → Replace the interlock switch (Air purifying device).

Yes

Keep the interlock switch (Air purifying device) Not-work (close) using something like a screw driver.
Turn ON the power supply. Is the voltage between CN1T1① (+) and ②(GND) on the electronic control P.C. board) 0V with the unit stopping? (Refer to 10-7.)

No
12.5 V DC is generated. → Replace the indoor electronic control P.C. board.

Yes

Set the AIR PURIFYING power failure mode recall function. (Refer to 10-2.2)

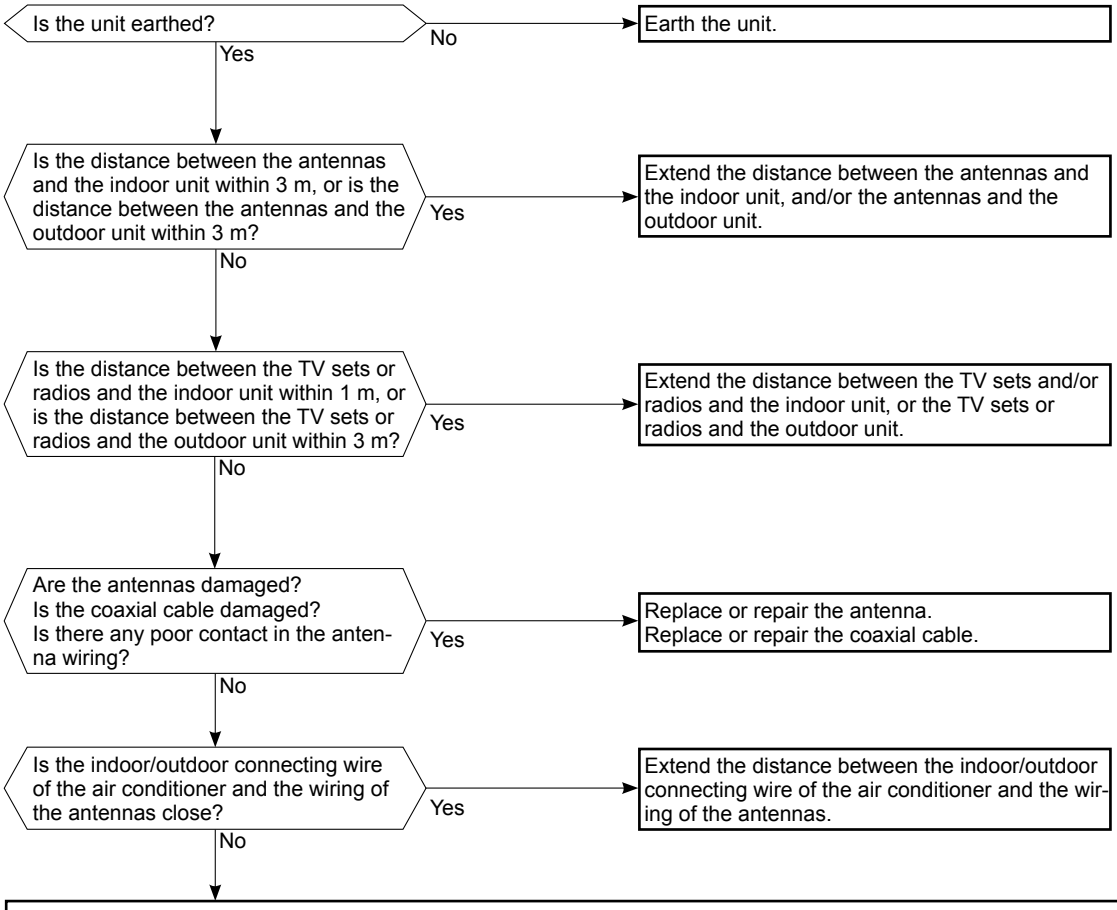
When AIR PURIFYING power turns ON by pressing PURIFIER button once, is there 12.5V DC between CN1T1① (+) and ②(GND)?

No → Replace the indoor electronic control P.C. board, after check of the wiring of CN1T1 on the indoor electronic control P.C. board.

Yes

Replace the air purifying device.

Ⓕ Electromagnetic noise enters into TV sets or radios


Is the unit earthed?
No
Earth the unit.
Yes
Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m?
Yes
Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.
No
Is the distance between the TV sets or radios and the indoor unit within 1 m, or is the distance between the TV sets or radios and the outdoor unit within 3 m?
Yes
Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.
No
Are the antennas damaged?
Is the coaxial cable damaged?
Is there any poor contact in the antenna wiring?
Yes
Replace or repair the antenna.
Replace or repair the coaxial cable.
No
Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?
Yes
Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
No

Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the following before asking for service.

1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

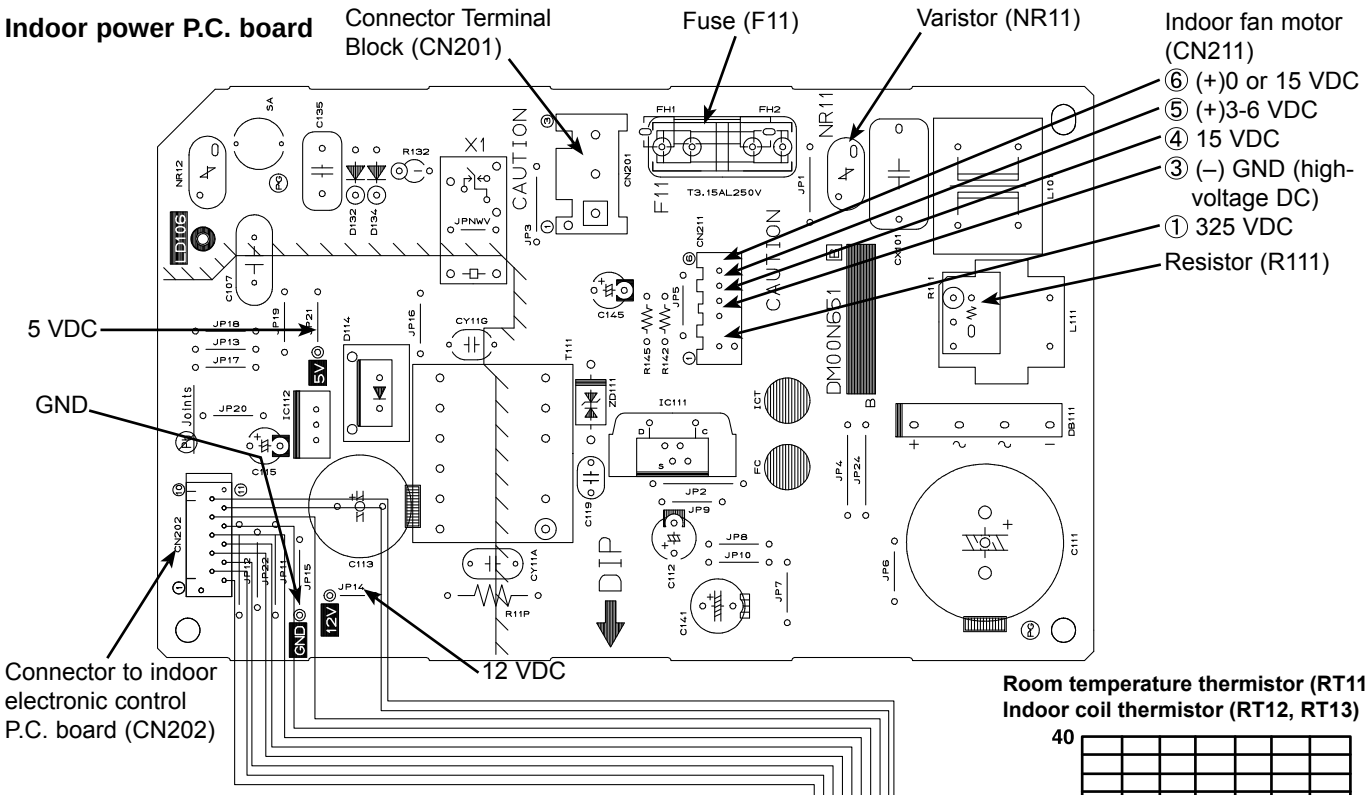
10-7. TEST POINT DIAGRAM AND VOLTAGE

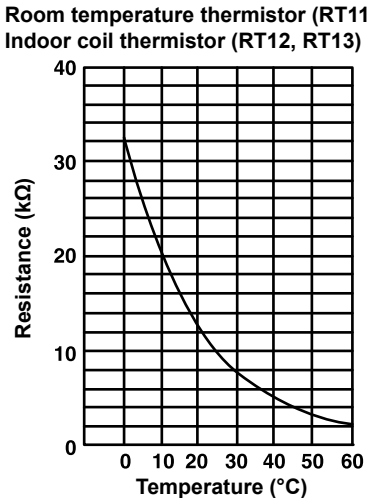
Indoor power P.C. board, Indoor electronic control P.C. board, Receiver board, Display board, Switch board

MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE

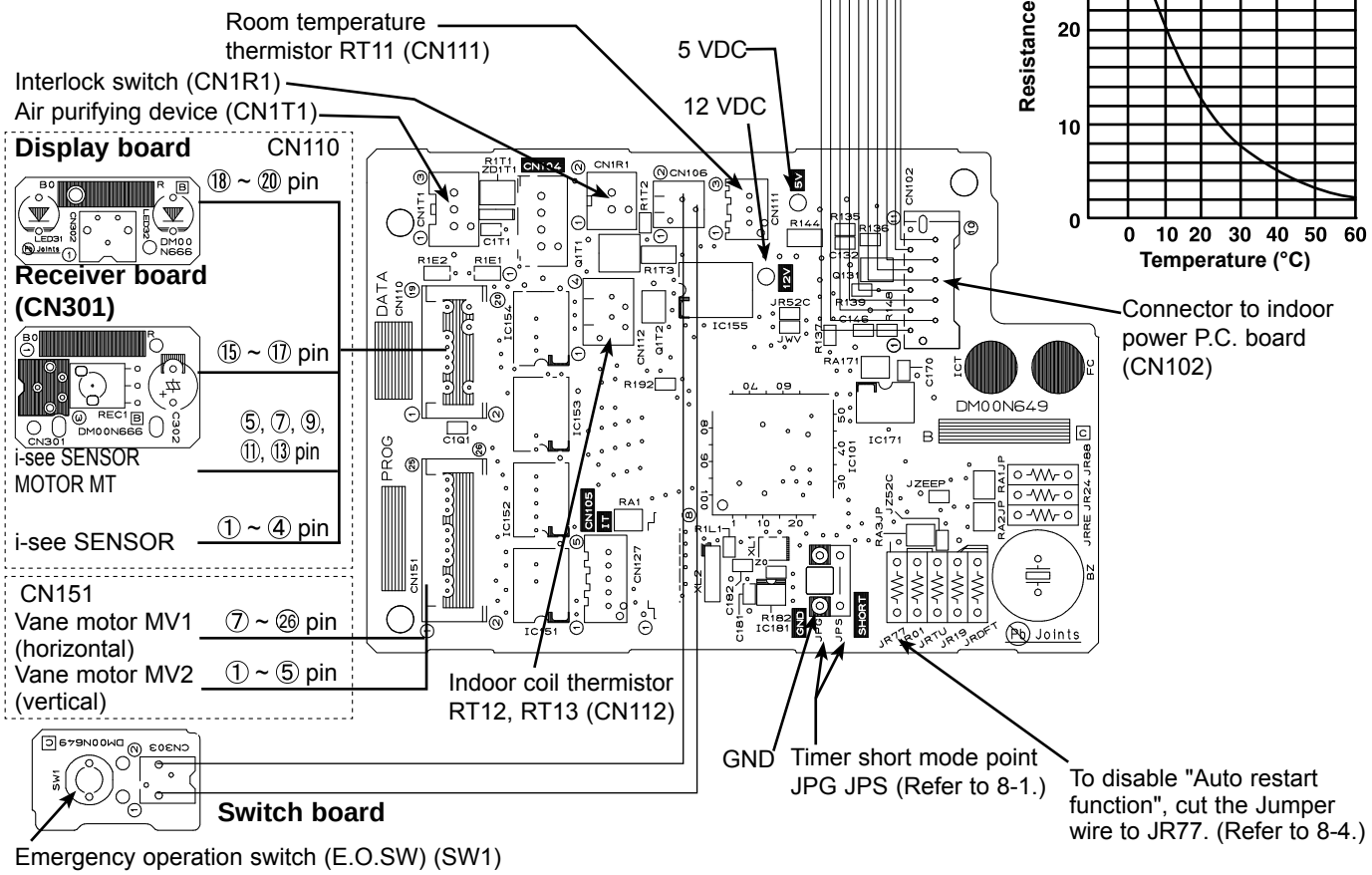
MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

Indoor power P.C. board





Indoor electronic control P.C. board

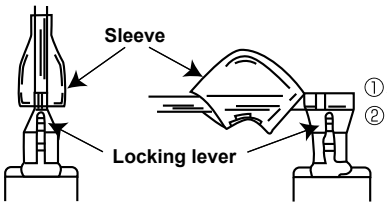

Room temperature thermistor RT11 (CN111)
Interlock switch (CN1R1)
Air purifying device (CN1T1)
5 VDC
12 VDC
Display board
CN110
⑱ ~ ⑳ pin
Receiver board (CN301)
⑮ ~ ⑰ pin
⑤, ⑦, ⑨, ⑪, ⑬ pin
i-see SENSOR MOTOR MT
① ~ ④ pin
i-see SENSOR
CN151
Vane motor MV1 (horizontal)
⑦ ~ ㉖ pin
Vane motor MV2 (vertical)
① ~ ⑤ pin
Connector to indoor power P.C. board (CN102)
Indoor coil thermistor RT12, RT13 (CN112)
GND
Timer short mode point JPG JPS (Refer to 8-1.)
To disable "Auto restart function", cut the Jumper wire to JR77. (Refer to 8-4.)
Switch board
Emergency operation switch (E.O.SW) (SW1)

11 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

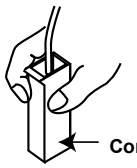
The terminal which has the locking mechanism can be detached as shown below.
There are 2 types (Refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

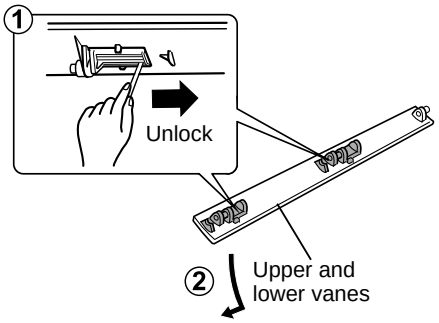
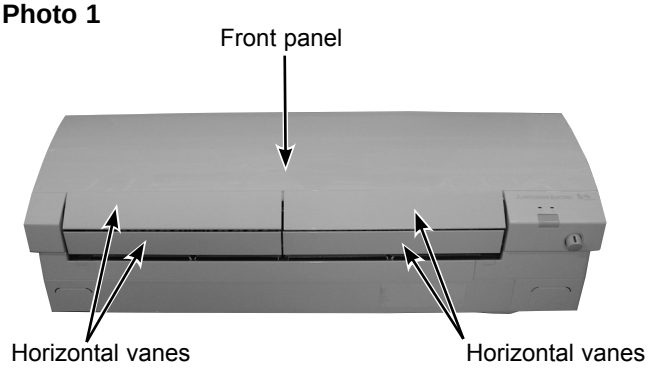
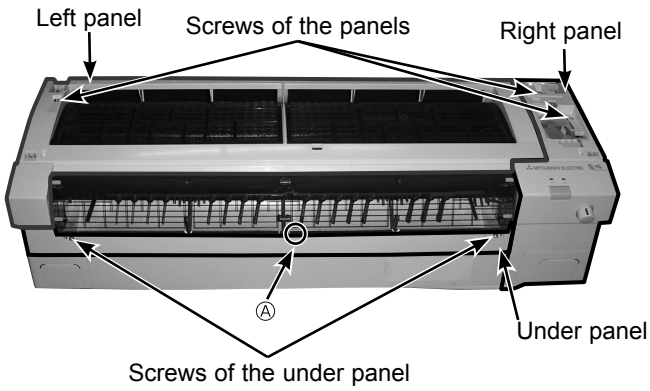
(2) The terminal with this connector has the locking mechanism.



①Hold the sleeve, and pull out the terminal slowly.

11-1. MSZ-FH25VE MSZ-FH35VE MSZ-FH50VE MSZ-FH25VE2 MSZ-FH35VE2 MSZ-FH50VE2

NOTE: Turn OFF the power supply before disassembly.

OPERATING PROCEDURE	PHOTOS
1. Removing the panel (1) Remove the horizontal vanes. **Removal procedure** Unlock the upper and lower vanes as shown in ① using a thin instrument. Then, remove the horizontal vanes in the direction of ②.  (2) Remove the front panel. Remove the screw caps of the under panel. Remove the screws of the under panel. (3) Pull out the right top corner of the right panel and remove the right panel. (4) Pull out the left bottom corner of the left panel and remove the left panel. (5) Unhook the lower part Ⓐ of the under panel and remove the under panel.	**Photo 1**  **Photo 2** 

OPERATING PROCEDURE

2. Removing the indoor electrical box

(1) Remove the panels (Refer to 1.) and the right corner box.
(2) Remove the screw of the V.A. clamp.
Remove the V.A. clamp and the indoor/outdoor connecting wire.
(3) Remove the earth wire connected to the indoor heat exchanger from the electrical box.
(4) Remove the screw of the electrical cover and remove the electrical cover.
(5) Disconnect following connectors:
<Indoor electronic control P.C. board>
CN151 (Vane motor)
CN1T1 (Air purifying device)
CN1R1 [Interlock switch (Air purifying device)]
<Indoor power P.C. board>
CN211 (Indoor fan motor)
(6) Remove the screw fixing the electrical box, then the upper catch of the electrical box, and pull out the electrical box.

※When installing the electrical box, pass the lead wire from the fan motor through Ⓑ (Photo 9) and Ⓒ (Photo 4) so that it will not be pinched under the electrical box.

3. Removing the indoor power P.C. board, the switch board, the display board, the receiver board and the indoor electronic control P.C. board

(1) Remove the panels (Refer to 1.) and the right corner box.
(2) Remove the screw of the V.A. clamp. Remove the V.A. clamp and the indoor/outdoor connecting wire.
(3) Remove the indoor electrical box (Refer to 2.).
(4) Remove the earth wire connected to the electrical box from the indoor power P.C. board.
(5) Disconnect the following connectors:
<Indoor electronic power P.C. board>
CN201 (Terminal block)
CN202 (To the indoor electronic control P.C. board)
(6) Remove the lead wire holder.
(7) Remove the indoor power P.C. board.
(8) Disconnect the following connectors:
<Indoor electronic control P.C. board>
CN106 (Switch P.C. board)
CN110 (DISPLAY AND i-see SENSOR ASSEMBLY)
CN111 (Room temperature thermistor)
CN112 (Indoor coil thermistor)
(9) Unhook the catches of the DISPLAY AND i-see SENSOR ASSEMBLY from the electrical box (right side).
(10) Unhook the catch of the rear cover of the DISPLAY AND i-see SENSOR ASSEMBLY, and open the rear cover.
Remove the display P.C. board and the receiver P.C. board.
(11) Open the switch panel and remove the switch P.C. board.

PHOTOS

Photo 3

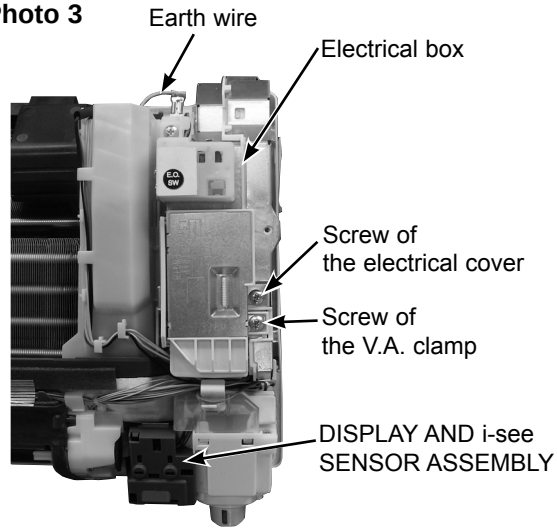


Photo 4

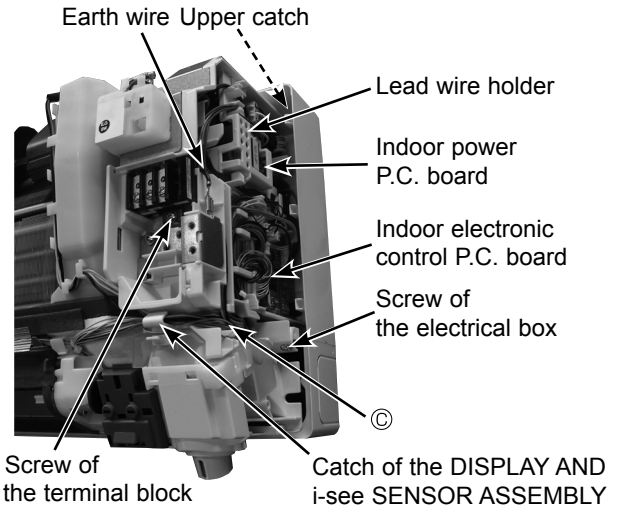


Photo 5

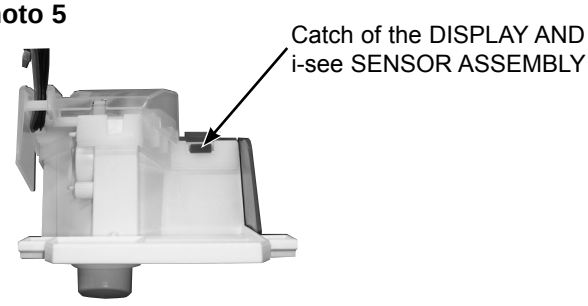
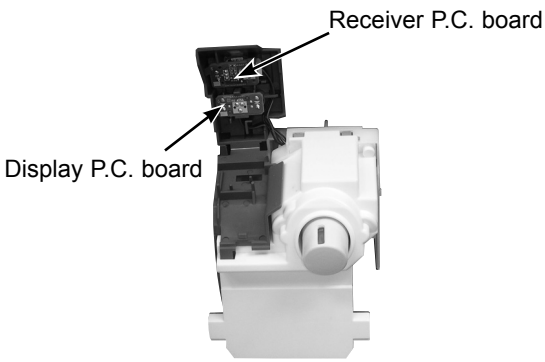
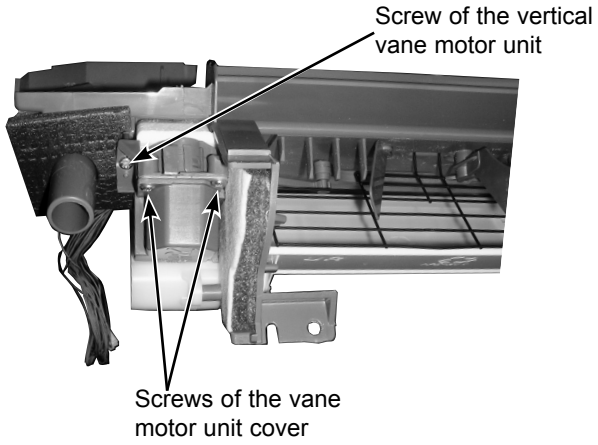
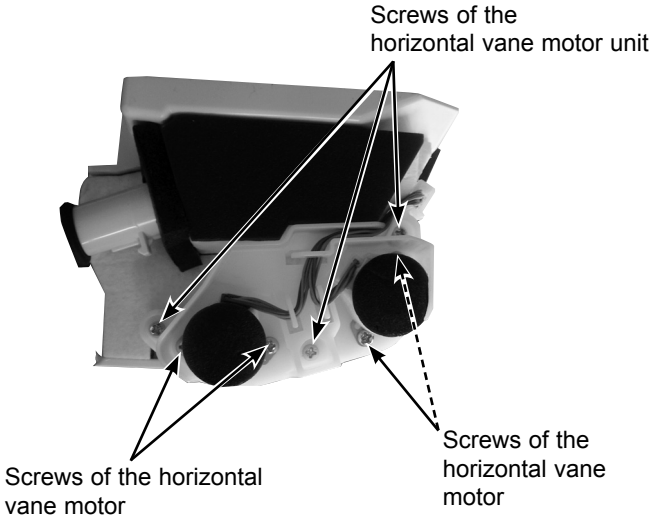


Photo 6



OPERATING PROCEDURE	PHOTOS
4. Removing the nozzle assembly (1) Remove the panels (Refer to 1.) and the right corner box. (2) Remove the indoor/outdoor connecting wire (Refer to 2.). (3) Remove the electrical cover (Refer to 2.). (4) Disconnect the following connector: <Indoor electronic control P.C. board> CN151 (Vane motor) (5) Remove the DISPLAY AND i-see SENSOR ASSEMBLY. (6) Pull out the drain hose from the nozzle assembly and remove the nozzle assembly. (7) Remove the vane motors (Refer to 5, 6.).	**Photo 7** 
5. Removing the vertical vane motor (1) Remove the nozzle assembly (Refer to 4.) (2) Remove the screw of the vertical vane motor unit, and pull out the vertical vane motor unit. (3) Remove the screws of the vertical vane motor unit cover. (4) Disconnect the connector from the vertical vane motor. (5) Remove the vertical vane motor from the vertical motor unit cover.	**Photo 8** 
6. Removing the horizontal vane motor (1) Remove the nozzle assembly (Refer to 4.). (2) Remove the screws of the horizontal vane motor unit, and pull out the horizontal vane motor unit. (3) Remove the screws of the horizontal vane motor. (4) Disconnect the connector from the horizontal vane motor. (5) Remove the horizontal vane motor from the horizontal vane motor unit.	

OPERATING PROCEDURE

7. Removing the air purifying device

(1) Remove the panels (Refer to 1.) and the right corner box.
(2) Remove the air purifying device.
(3) Remove the electrical box (Refer to 2.).
(4) Remove the lead wire from the water cut.
(5) Release the hooks of the water cut and remove the water cut.
(6) Remove the screw of the air purifying device support.
(7) Remove the air purifying device support.

8. Removing the indoor fan motor, the indoor coil thermistor and the line flow fan

(1) Remove the panels (Refer to 1.) and the right corner box.
(2) Remove the indoor electronic control P.C. board holder, the electrical box and the nozzle assembly.
(3) Remove the screws fixing the motor bed.
(4) Release the hooks of the water cut and remove the water cut.
(5) Loosen the screw fixing the line flow fan.
(6) Remove the motor bed together with the indoor fan motor and the motor band.
(7) Release the hooks of the motor band and remove the motor band. Pull out the indoor fan motor.
(8) Remove the indoor coil thermistor from the heat exchanger.
※ Install the indoor coil thermistor in its former position when assembling it (Photo 9.).
(9) Remove the screws fixing the left side and the upper right side of the heat exchanger.
(10) Lift the heat exchanger, and pull out the line flow fan to the lower left.
※ When attaching the line flow fan, screw the line flow fan so 4 mm gap is provided between the right end of the line flow fan and the right wall of the air passage of the box (Figure 1).

Figure 1

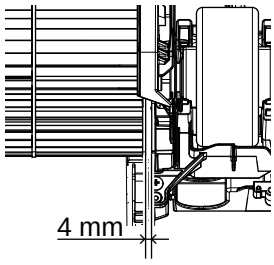
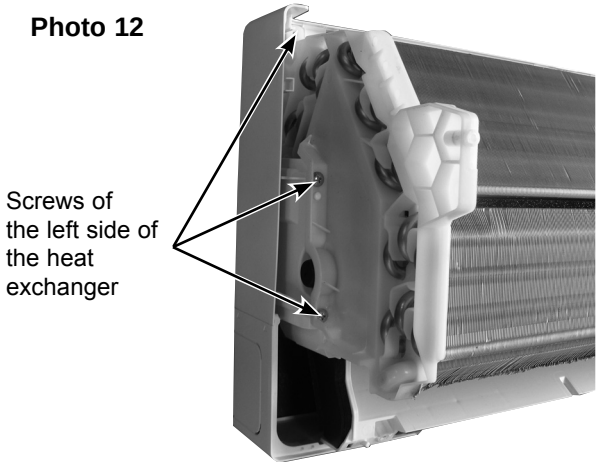


Photo 12



PHOTOS

Photo 9

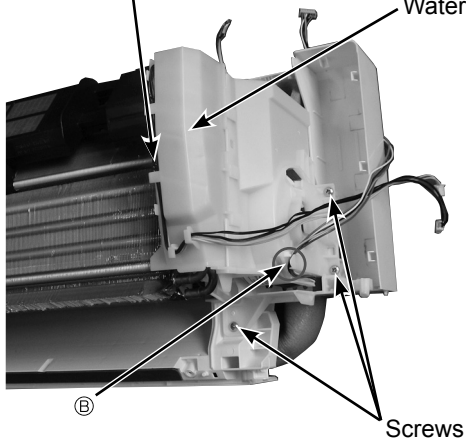


Photo 10

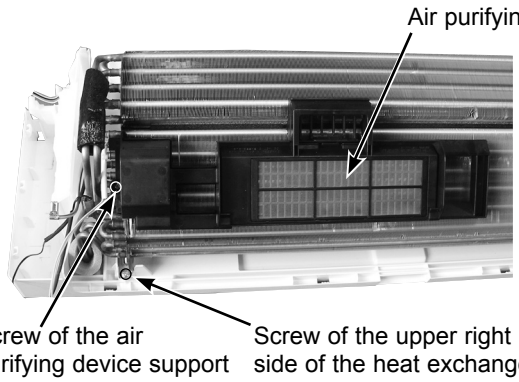
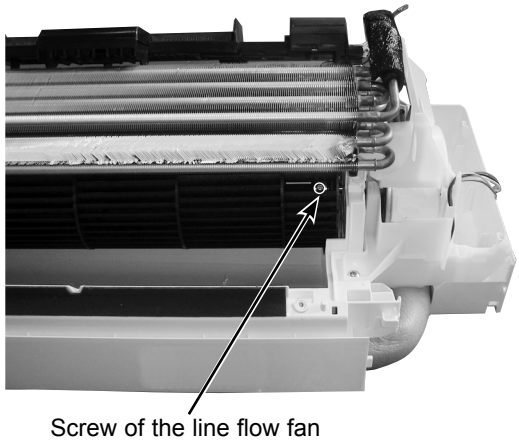


Photo 11

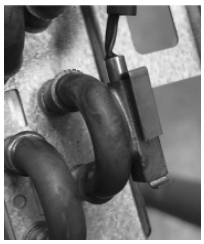


Fixing the indoor coil thermistor

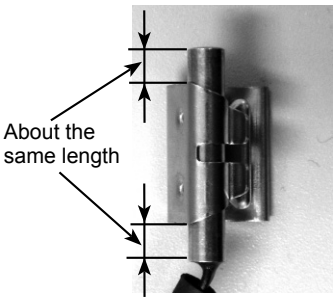
※ There are 2 forms of parts for fixing the indoor coil thermistor.

Clip shape

Holder shape

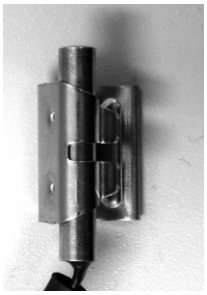


When fixing the indoor coil thermistor to the clip-shape/holder-shape part, the lead wire should point down.



Position and procedure for mounting the clip-shape part

1. Set the indoor coil thermistor in the center of the clip-shape part.



2. Check the (marked) mounting position.

3.Mount the clip-shape part.

NOTE:

- Take care to avoid loss and accidental falling of the clip-shape part inside the unit.
- Mount the clip-shape part on the marked position.
- Do not pull the lead wire when removing the indoor coil thermistor.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

© Copyright 2012 MITSUBISHI ELECTRIC CORPORATION
Distributed in Nov. 2015. No. OBH623 REVISED EDITION-D
Distributed in Jul. 2014. No. OBH623 REVISED EDITION-C
Distributed in Dec. 2013. No. OBH623 REVISED EDITION-B
Distributed in Mar. 2013. No. OBH623 REVISED EDITION-A
Distributed in Jul. 2012. No. OBH623
Made in Japan

New publication, effective Nov. 2015
Specifications are subject to change without notice.